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"GROUP PRACTICE"*

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SINCE the Massachusetts Medical Society was founded 146 years ago, it has labored to merit the confidence of the public. Its long record of achievement has won the admiration, sympathy, and support of all classes of society. The foundation upon which this endorsement has been secured was established in large measure by its charter members. We must not forget their names or their deeds. Among others, Josiah Bartlett, John G. Coffin, Henry W. Childs, John Brooks, Nathaniel Butler, Aaron Dexter and Oliver Fiske are names with which relatively few are familiar, yet they were among the early masters of medical thought in New England. A review of their communications in the first volumes of the proceedings of this Society provides ample evidence of their scholarly attainments. They held a scrupulous regard for experience and truth; they based opinions upon reason and logic; their judgment was sound; they often suspended their activities in favor of nature's better way; they labored to eliminate error and thus opened the path for beneficent rearrangements of the circumstances of life. So I take great pleasure and pride in reflecting upon the problems of medical practice with these pioneer authors of our commonwealth in mind.

Medical knowledge in this early period was necessarily scant. Some of the difficulties which beset doctors then still exist. New systems hastily constructed, weakly supported theories and visionary speculations, first received with approbation and applause, lived a brief existence and passed into oblivion then, just as they do now. Quackery flourished perhaps more than it does today. The preceptors of that period were struggling under the handicap of limited education and with what medical skill they possessed against the empiric, the Indian doctor, the modern prophet and the seventh son, just as today we encounter the natural bone-setters, the chiropractors, the cancer specialists and the opponents of preventive medicine.

In their efforts to improve their methods of practice, these early leaders in medical science held many discussions bearing upon the relations of doctors with each other. They found the questions as difficult to solve as they are today. However, it is clear that their viewpoints were not dissimilar to our own, and it will be observed that their ideas were comparable with those which I take the privilege of presenting for your consideration. In the preface to the articles of incorporation of this organization in 1781, we find the following expression: "The progress of members when connected in society and earnestly engaged in the same pursuit must be far more rapid and sure than among an equal number of detached individuals." Throughout his dissertation upon the "Uncertainty of the Healing Art" in 1828, Dr. George Cheyne Shattuck spoke with a deep regard for the welfare of his professional brethren. He said: "Fellows of this society meet like neighbors somewhat removed. Neighbors a little removed, on coming together, usually fall into discourse on some topic within compass of their common trials. The trials of the physician are numerous." Therefore, I venture to give utterance upon a subject, the character of which, no doubt, would carry a strong appeal to a nature such as Dr. Shattuck possessed.

To me it seems quite certain that group practice, or a method of coördinating knowledge and experience in caring for the sick as implied in this term, would fall well within the compass of our common trials. That we are considerably at sea in regard to the best manner of utilizing our resources in dealing with the sick is made evident by the variety of methods employed. Throughout the career of nearly every doctor, the shifting processes employed indicate a strong desire ultimately to attain the ideal. Any scheme however perfect is not generally adopted until it has been subjected to careful examination and tried by independent investigators.

TYPES OF CLINICS

Modern group practice, in all its ramifications is too important to leave as an unsettled inquiry until it has been examined by the keenest and fairest minds in the country of its origin. Because of the many controversial questions involved, those who have merged the specialties purposely, or fortuitously, into serviceable organizations seldom write upon the subject. Whether such groups should be termed public service or proprietary clinics, special, general, public, private, curative, or preventive is purely academic. A well organized clinic may employ any or all of these embroideries without committing a solecism. Most authors fail in an attempt to apply the proper designation to organizations engaged in group practice. It is doubtful at present if it can be done. Like the weather, they present many shades of difference and defy classification. At least, no attempt as yet has proved successful. The propriety of using the term "clinic" in group practice has been questioned. The etymology of the word "clinic" is from the Greek "Klinikos"; pertaining to a bed, a bedside lecture or demonstration. Like the word "hospital," which originally applied only to an inn for weary travellers, the expression "clinic" by usage has found a liberal acceptation. Davis defines "clinic" as an institution receiving ambulatory patients for diagnostic, therapeutic or preventive service. Here the license to use the word "clinic" is probably based upon the assumed position of patients in the clinic as inclining toward the hospital. While retaining some of its literal sense, "clinic" is quite generally used figuratively as applying to whatever one's organization happens to be.

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*The Shattuck Lecture, delivered before the Massachusetts Medical Society at Boston, June 7, 1927.

In a table published by the same author, a list, revised in June, 1926, accounts for 5726 clinics in the United States. In this number are included out-patient departments of general and special hospitals, unattached clinics, clinics serving special groups and group clinics. A list of 296 group clinics, secured from the American Medical Association, was checked over by correspondence and otherwise. This reduced the number of known group clinics to 220, or a trifle less than 4% of the total.

One can do little more than speculate upon these findings. A reduction of 25% in any census subsequent to and based upon that of the American Medical Association seems highly improbable. There can be little doubt that the lower figures were obtained by the use of a different method of classification, or the failure of many clinics to report. From all the evidence one can obtain in travels, the number of group clinics is rapidly increasing. Rarely a downfall is reported although some have disbanded without notice and others have disappeared without leaving a trace. Many groups are connected with hospitals, registering the hospitals, but not as group clinics. Obviously, there is need of definition, standardization, census and helpful direction.

PRINCIPLES INVOLVED

For success in group practice large sums of money must be available for building, equipment and salaries. Out of their income members of the group must expect to share, to some extent, at least, in the costs of expansion. In many groups this has been done in a spirit of devotion to a splendid principle and not a fashion.

In Fall River, the group of which I am a member has functioned for twelve years, still we cannot lay claim to success. We have secured the confidence of a doubting public; we have remained intact; and we have expanded our resources along the path of scientific medicine, yet these are but three links in the long chain to success. The way is venturesome and beset with difficulties because there is no universal guide. Among those who have reached the goal, the important factors which contributed to their advance are so remote as to be entirely forgotten. Moreover, their guiding stars have been so unusual, and so peculiar to the individuals and the localities in which they operated that they are no longer available for purposes of adoption in other and widely different environments.

PRINCIPLES OF GROUP MEDICINE

A few of the principles of group practice are constant and immutable, but the ways and means of their application must of necessity vary to meet conditions which are essentially local. Among the members of a group there should exist:

(1) Loyalty
(2) Unity of purpose
(3) Liberal understanding
(4) Harmonious relations
(5) Coöperative spirit
(6) Self-abnegation and a willingness to work for the art which they profess.

An organization may be small, it may be imperfect in its management, it may be unpopular with outside doctors, but if it adheres to these principles, it will endure in the esteem of the public. The most successful clinic is not one which admits the largest number of patients, but one which renders the best service; it is not the clinic which discharges the most patients, but that one which discharges the largest proportion *satisfied* and *well;* it is not the clinic which has the most elaborate equipment, but the clinic which uses what it has to the best possible advantage; it is not the clinic which makes the most money, but the one which does the greatest good with the money that it has at its disposal.

Dr. John Gibbon of Philadelphia has said of surgical practice: "Wisdom is as necessary as knowledge and not so easily acquired." It is evident that there is an ever growing demand for wisdom in the coördination of the doctor's daily work. Because it is a comparatively young institution, group practice depends for its success upon wisdom in every course of action.

EVOLUTION OF COÖPERATIVE PRACTICE

The idea of association, coöperation and partnership as implied in group practice, is not new. Among the preceptors of an age that has gone, these principles were found in operation. They were in keeping with the regular order of practice and medical teaching of their day.

Dr. Edward Augustus Holyoke, who presided over the first meeting of this society in 1787, made this suggestive comment on that occasion: "Indeed, the joint efforts of many engaged in the same design may accomplish in a few years what would be impracticable to a few individuals though employed for ages." He was an instructor of unusual attainments, receiving pupils during the entire period of his active practice. Moreover, he was a pioneer in a form of group practice which was miniature in proportion, but most creditable in the method of application. Altogether, thirty-five of the most distinguished physicians of New England became practitioners by virtue of their associations with Dr. Holyoke. To be sure, it was largely a one man group. Nevertheless, master and assistants enjoyed an atmosphere in common. They studied their patients together; they discussed the accumulated evidence in intimate association; and in a general way, there was a helpful division of the work and responsibilities. That form of group effort served its day, and nobly, too.

The next step in the direction of group practice was observed in the development of the specialties. Special hospitals were founded early in the nineteenth century: the Royal Opnthalmic Hospital in London in 1804; the Royal Hospital for Diseases of the Chest in 1814; the Royal Ear Hospital in 1816; the Lying-in Hospital in Boston in 1832; and the Royal Orthopedic Hospital in England in 1838.

The activities of these institutions resulted in a conspicuous animation in those departments of practice. Many new instruments appeared including the stethoscope and the compound microscope. Ether came in 1846, the laryngoscope in 1855, the clinical thermometer in 1857, the spectroscope in 1859, and the Roentgen ray in 1893.

While these events of outstanding significance strongly influenced a development of the specialties, it is generally conceded that the era of modern medicine did not begin until 1857, when Pasteur published his researches on lactic and alcoholic fermentations. He provided the civilized world with a knowledge of the chief maladies which had destroyed men and animals, and he described measures of defense against these diseases. Perhaps few would permit the association of the name of Louis Pasteur with group practice. Nevertheless, during his earlier researches he remained in intimate contact with physicists, chemists and biologists. His confidant was Chappuis. Belard and Laurent were his co-workers. He also associated with Delafosse, Vercel, Charrier, Coulon and Regnault. While he was Professor of Physics at the Dijon Lycee, he mixed with Biot and his assistants. At Strassburg he assisted Bertin and lived at his home. Pasteur frequently referred to these co-workers as his comrades. Like the preceptors in medicine these scientists labored in a spirit of co-operative helpfulness.

In 1867, Lister made his contribution to wound infection. Applying the discoveries of Pasteur, he solved the problem of human infections. In the sixty years that have followed, the march of intellect has made of medical knowledge a storehouse of information. It is no longer possible for any one physician to embrace the entire field in his activities. The parts into which medical knowledge has become subdivided necessarily must be defined for efficacious and orderly practice. Although the frontiers of medicine have been greatly extended, the family physician remains an essential factor in the entire structure of modern practice.

However, more of the medical school graduates are becoming specialists and will continue to do so as long as the public feels that when you go to a physician he tells you what you have but when you go to a specialist you've got what he tells you.

"CURRENTS AND COUNTER CURRENTS"

From visits to Memphis, Tennessee; Richmond, Virginia; Minneapolis, Minnesota; Cleveland, Ohio; Sheboygan and Fond du Lac, Wisconsin; one finds sufficient evidence to show that group practice in some form has come to stay. It should serve as a helpful means of contact and not as a rift in the ranks of the profession. Just as the dissenting elements among states, communities and societies are brought together by some common cause, so it is with this minor division in viewpoints between those in general practice and those practicing group medicine. Their traditions and ideals are identical and their aims are not divergent. There are counter currents in evidence which eventually may weld them together in a struggle to protect their common interests. Looking out upon the horizon, one does not assume the role of an alarmist in giving mention to that forbidding spectre which appears from time to time in the form of "State Medicine." This issue is far from being an air-drawn dagger. The professions of England and Germany already can testify to the character and sorrow of its visitation. As we permit the affairs of medical practice to pass more and more into the hands of the laity, we show such evidence of executive weakness that new organizations outside the profession will employ their agents from among us and will have themselves appointed our administrators. "The Perils of Magnanimity" dealt with by Professor Hans Zinsser in the *Atlantic Monthly* draws the curtain and reveals a stage set with machinery for the control of medical education. He remarks: "The guidance of medical education is to a considerable extent passing out of the hands of the universities themselves into the hands of permanent, or at any rate, self-perpetuating bodies of gentlemen who, by the very force of the established relations, cannot help extending their influence over all the important centers of American education." Thus medical education is being compelled into fixed systems in which initiative is destroyed and freedom of development made impossible. Commenting editorially upon this observation, the *Journal of the American Medical Association* adds:

"Dr. Zinsser sees universities deprived of autonomy of decision both as to policy and as to details of method. His note of warning against standardization of medical education, through the economic pressures exerted by philanthropy, is timely. The medical profession in various communities have already protested against attempts by health demonstrations and similar movements to destroy initiative and individual relationships in medical practice."

From another angle V. N. Leonard of Duluth warns the medical profession not to invite degrading and destructive legislation. "The alert and unscrupulous politician, ever ready to rob Peter to pay Paul," he adds, "is even now turning his attention to the medical profession. State or social medicine, or compulsory health insurance, is intolerable. We must organize and be ready to strike it down." He refers to the Davenport bill in New York as an example of the heights to which unscrupulous legislators, and the influences behind them, are willing to go toward the socialization of medicine.

Again, we must not lose sight of the fact that the Departments of Public Health are multiplying rapidly in all grade A medical schools; that the graduate from a Public Health department pursues a career which differs considerably from that of the general graduate. At an early date, as a Public Health Officer he is likely to become enmeshed in politics. He always works on salary, and his bond of interest with members of the profession at large becomes more and more fragile. Now he depends upon the coöperation of the medical profession to keep his machinery in operation. Will it be so always? When his numbers have greatly increased and his authority as a legislator becomes a power, the other members of the medical profession will have occasion to unite on this aspect of their common trials. A recent editorial in a medical periodical states that Dr. Matthias Nicoll, Jr., of New York, State Commissioner of Health, challenges the medical profession in no uncertain words in discussing "The Past, Present and Future of Preventive Medicine," November 1, 1926. He states that the main duty of Public Health Officials lies in the realm of preventive medicine and hygiene, but denies the possibility of the development of state medicine "unless or until the general medical profession is unable or unwilling to qualify itself in and practice the principles of preventive medicine, with a consequent neglect of those who look to it for professional advice."

Who will determine the inability or unwillingness of the medical profession to qualify in the advancement of preventive medicine? Probably those who are best organized and possess the most power.

Of the campaign against diphtheria Dr. Nicoll makes this amazing statement: "I am prepared to state without fear of contradiction that, up to the present time, the great majority of members of the medical profession have done little or nothing to bring about immunization against diphtheria among their private patents." This statement may be true of New York, but it does not apply to communities in general. The medical profession is not equipped with trumpets for the purpose of heralding abroad its endorsements of such sane measures for public health. The rank and file in practice do not merit such criticism for the exercise of caution. As soon as information from authoritative sources bearing upon the value of the Schick test and the use of toxin-antitoxin for the prevention of diphtheria was circulated through the medium of important medical journals, the available supplies of material were seized upon with avidity and enthusiasm by doctors everywhere. It is doubtful if the application of these important discoveries for protecting school children would have met with any degree of success in this commonwealth without the moral support and coöperation of the medical profession.

Thus far in the state of Massachusetts, no veiled threats have been served upon the medical profession by the Health Commissioner or his associates. We believe that the public health will be conserved to the best advantage by a continuation of the present policy of coöperation and joint participation between the State Department of Health and the organized medical profession of this Commonwealth.

Rexwald Brown of Santa Barbara, California, in writing on group practice in medicine, aligns the specialists as the proponents and the general practitioners as the opponents. Although these terms savor of rivalry and conflict they are not entirely misused. Since the disunion has been so apparent as to be identified, it is likely to persist as long as each division fails to be of service to the other. I believe that it is the business of the group to show the general practitioner that to encroach upon his province is not a part of its plan and that it will trespass as little as the shifting opinion of an ever-wavering public will permit. That some conflict will result is inevitable; that some apparent breach of faith will occur on both sides also can be assumed. Acquaintance and understanding must be cultivated in order to maintain a state of mutual respect. If the group is popular with the public, it is less likely to be approved by the majority of the profession in its own community. If it remains stationary or meets with reverses; if the members of its personnel are convinced that their medical education is complete; if they are indifferent to evidence of progress; and if they fall among the file closers in practice, the organization may be more at peace with the medical profession, but it will live a brief existence and pass into oblivion. Brown makes the hopeful comment that the controversy behind the verbal battle is not an unhealthy one, because its object is the welfare of the sick to which the medical profession is consecrated.

THE MAYO CLINIC

The clinic most frequently referred to in this country is that created and expanded by William J. Mayo and Charles H. Mayo. This group, as one remembers it twenty years ago, was associated with St. Mary's Hospital, founded at Rochester, Minnesota, by the elder William Worrell Mayo. Tradition and training, together with an intelligent Sisterhood, formed a background for the development of this enterprise. To the casual visitor, at that time, it was apparent that the Mayos by their eagerness for truth, honesty of purpose, and wisdom in action would succeed in the greatest endeavor known among practitioners of medicine.

Special environment, hitherto considered so essential in medical centers, was lacking in Rochester, Minnesota, so they began to weave their own. The present picture bespeaks their resourcefulness and common sense in the assembly of attractive and useful activities almost to the entire exclusion of the frothy social functions which result only in dissipation of valuable time. By self-discipline, self-sacrifice and leadership they converted the contingency of isolation into a community quickened by a zeal for the pursuit of knowledge and truth.

It is quite impossible in a short narrative on the subject of group medicine to include more than a brief reference to the Mayo Clinic. That it should have become one of our most highly esteemed centers of medical knowledge is not the least amazing because, in its infancy, a liberal love of teaching was ingrained among its leaders. Their sympathy, humor and talent attracted students from all parts of the world. With infinite patience and endurance they bore the onslaught of practitioners eager to learn. The visiting doctors found the clinic chiefs to be their warm-hearted hosts, the doors of their departments wide ajar, and knowledge a gift.

The Mayos turned revenue into laboratories and equipment. Out of their earnings they committed themselves that leaders in the sciences might join their forces; that the wealth of clinical material might not escape the machinery for exhaustive inquiry; and that the ends of the sifting processes from the hands of their investigators might become common property of the profession.

The Mayo method of organization almost escaped notice during its first decade. The reputation of its leaders as surgeons advanced rapidly, but the significance of the great movement which they espoused continued unrecognized for another ten years. This is not remarkable, for it is doubtful if the potential possibilities of the Mayo Clinic ever existed in the minds of Dr. William and Dr. Charles. It would have required a feat of the imagination even to conceive the test upon mind and body, upon skill and endurance that has been displayed by these men. They went about their work of honest practice, calling upon carefully selected experts for knowledge which they themselves lacked. Eventually, in this way, they covered every division of medicine with the highest order of skill and proficiency. At the opening of the Crile Clinic at Cleveland, Ohio, Dr. William Mayo surveyed the layout and realizing the responsibilities and cares involved in an undertaking of the sort, looked upon his friend and colleague, Dr. George Crile, not in admiration alone, but as an object of compassion, and made this significant remark: "My brother and I have been accused of being the father of group medicine. If that is true, we did not know it."

It was not until the adoption of the Mayo Clinic as a teaching foundation by the University of Minnesota in 1915 that a mass of evidence was made available, demonstrating beyond question the superiority of an organization such as theirs over the individualistic systems which had occupied the entire field of practice as an immemorial custom.

For many reasons, it is not likely that the measure of achievement realized by the Mayos will be equalled as the art of practice continues its progress. It is not probable that any stage setting of the future will present the possibilities in coöperative practice equal to those which greeted the medical profession at the beginning of the present century. At that eventful period anaesthesia, asepsis, modern operating room accessories, including gowns and rubber gloves, together with an advanced pathological technic, equipped the surgeon to pursue disease intelligently in hitherto unexplored regions of the body. These acquisitions promptly found almost universal adoption, with little difference in the way surgeons made use of them. In this part of the country as in most others, surgeons served three or four months annually on the surgical divisions of large hospitals, with the rotating services of internes and nurses. They operated upon their private patients in small hospitals poorly equipped. In other instances they carried complete surgical outfits, including the operating table, to improvised operating rooms in remote small hospitals, or to the homes of their patients. By force of circumstances they went to the patient where he was located. They enlisted their assistants from among those who happened to be present, so that in the picture of every operation there appeared new faces on the stage.

Contrast this picture with that of the Mayo Clinic to which all classes of patients, the poor, the rich and those of moderate means came for diagnosis and treatment. The Mayos never went to the home town of a patient. Realizing the disadvantages of that prevailing system, they made conditions so attractive at Rochester that their patients came to them. In contrast to the incivilities of surgeons in operating rooms which prevailed a generation ago, Dr. W. D. Haggard of Nashville, Tennessee, has said that the Mayos inaugurated standards of courtesy and tranquility, affecting their assistants in a manner which resulted most advantageously to the patient. They operated daily under the same roof, in the same room, with the same well-trained assistants on all sides; with the historian, the artist, the urologist, the pathologist and a fellow surgeon standing by. Had they been mediocre surgeons, in such company they would have outdistanced their contemporaries. Being men of rare talent and common sense, it is a happy, but not extraordinary circumstance that, in this open field, the gradual evolution of their clinic into the premier postgraduate teaching center, almost as an automatic generating mechanism, should mark a distinct epoch in the history of medicine.

EVOLUTION OF PRACTICE IN NEW ENGLAND

As one looks back over the period of evolution in New England, where any variation from well established custom is looked upon askance and venture is rarely met with praise, the outstanding feature of surprise is that the paths of our ambulatory surgeons were blazed with such exceptional credit. They acted in the capacity of physicians, surgeons and teachers. Though handicapped in so many ways, they were instrumental in establishing surgery in the confidence of the public. They were not only ornaments, but martyrs of the profession.

The old custom is gradually disappearing. Doctors are entrenching themselves. Each desires his own workshop in order that he may attain the highest degree of utility and skill with a minimum amount of wear and tear. Already the metropolitan hospitals have provided accommodations for wealthy patients and for those of moderate means as well as for the poor. Those which have not are busily engaged in catching up.

The view has been expressed, and seems warranted, that physicians of New England have little enthusiasm for the development of group medicine; that in this section of the country individuality in practice is a very highly cherished and strongly defended principle. A modest experience has led me to feel that this opinion needs an occasional dash of cold water. Specialism in America began in Boston. Group medicine is an outgrowth of specialism. It will flourish in New England, as it has in the south and west, when those of us who advocate it can furnish evidence enough to show that it functions best in the interests of both doctor and patient. The Lahey Clinic in Boston is an example of its success. Magnanimity, Paternalism, high standards of service and the spirit of research characterize the directorship of this organization. Few men can, or desire, to inaugurate a group under such auspices. These attributes and resources are of great advantage in the development of a group, but they are difficult of attainment, and not always essential.

At present, many difficulties present themselves in the reorganization and readjusting of staffs in our hospitals. The various systems are still imperfect, but on all sides evidence of progress has been noticeably in advance of building construction. The approach to the ideal is slow and at times painful. It is disorderly on occasion, for in any great movement the process of evolution is seldom rapid. Too often tradition is a stop-gap to progress. Those intangible bulwarks which immemorial usage has contributed to the foundations of an institution are not easily dislodged, even by gross errors in the application of its human machinery.

In this respect, group practice, if applied in large hospitals, presents a far more complicated problem. While it is not beset by the imminent dangers of dissolution which are found at the inception of group clinics, it is, nevertheless, far more difficult to reorganize a large hospital staff into a harmonious group than it is to inaugurate a group out of entirely new material. The hospital is often encumbered by a benevolent board of trustees, the members of which may be captains of industry, but cripples in the important and delicate commission of organizing medical groups. Matters would be greatly facilitated if both parties were to recognize the fact that in every hospital there are two administrative divisions, distinct and apart in nearly all details, but coördinated in the general function of the plant. One is the business department, and the other the professional. The former provides agencies for securing land, buildings, and equipment, and for controlling the budget, collections, disbursements and accounting. The latter organizes and directs the staff of doctors and nurses, and creates standards. Just as medical and surgical staffs need balance, so should boards of trustees be coördinated to meet the dual problem of hospital management. The business administration calls for the services of a man of special education, experience and tact. A physician occupying this position usually becomes a liability. But a physician should be designated as director of the professional group. One possessing a liberal education, executive experience and gentlemanly manners will advance the organization materially.

The intimate problems of the sick often tax the best trained minds in the medical profession. To place these matters at the discretion of individuals without medical knowledge is a fundamental error. Among clergymen, lawyers, politicians and others some can be found who appear to cherish a morbid desire to appoint themselves administrators of the medical profession and guardians of the public health. In some hospitals the capricious order of regulating doctors' fees has become a pastime among trustees. Is this not an expression of the human tendency to control the other fellow's activities? In the affairs of the physician, his charges for medical and surgical services are matters of conscience. When there is adequate proof of violation, there is need of conference and renewed understanding. Otherwise, to decree injunctions and enjoin the physician or surgeon is an act of indignity, pernicious in purpose and practice. What would be said of us if we attempted to regulate the Sunday contributions in the churches, lawyers' fees, or political contracts? In the planning of hospitals, doctors and nurses, who are to spend much of their lives at work in them, are seldom called upon for advice bearing upon the interior layout. What barbed innuendos would be called forth if doctors, in their leisure hours, planned the court houses, placing the press agents where the jury should sit, the witness stand in the center and the presiding Justice on the side! Hospital architects without pilots have matched this picture for those who work in hospitals.

However, it would be as untrue as it is unwise to state that men outside the medical profession are not desirable as hospital trustees. They are not only desirable, but they are very necessary. Yet they should help, not embarrass the profession. A lawyer can be of inestimable service on a board of hospital trustees. The same may be said of a man with business training and experience. There are plenty of examples of their coöperation and inspiring attitude as associates and partners in a serious occupation.

Is it not only reasonable, but expedient as well that the professional staff should have a voice in the selection of the personnel of the board of trustees? This would appear to be a radical revision of custom. Some would call it heresy, but is it not logical and just? The corporation which appoints trustees is simply an artificial body created by law. It is the impersonal owner of the hospital; whereas, the professional staff constitutes the primary agents through which the required activities of the hospital are conducted. It is the important burden-bearing corps of the institution and comes directly under the control of the board of trustees, often a collection of persons not competent to discern the trend of medical progress, or determine standards and relations of professional groups.

One of the policies of boards of hospital trustees usually is to exclude physicians from their numbers.

Members of the professional staff virtually are the servants of the trustees. In some hospital organizations a representative of the staff is permitted to meet with the trustees. The physician, on such occasions, possesses much of the information required by the trustees at the average meeting. He is admitted, heard and dismissed. Seldom is his counsel heeded, because of the failure to understand his single purpose, the best use for the patient of all the leverage in the institution. What a mockery to place him in the position of a suppliant, and treat him as an alien. If his knowledge and counsel are worthy of the name, he should be a fellow trustee, not an intellectual mendicant. Since there is no great scarcity of judicial minds among doctors of medicine, let us hope that among hospital administrators of the future the position of the professional body will not be one of impotency. As it is now, they have no voice in the major policies of the hospital and no authority to carry into execution measures which may be very essential for the welfare of the sick. With due regard to hospital business, is not the selection of trustees, then, essentially a medical problem and not one for which the corporation is fitted? Does it not involve the choice of men who, in the first place, understand the aims of scientific medicine and the viewpoint of doctors in their everyday duties of administering to the sick, teaching at the bedside, and contributing something to all forward movements in the profession? There are too many good reasons why the medical profession should be well represented on every board of hospital trustees, to deny its members a voice and a vote in the transaction of its business. The only explanation for their exclusion appears to be the obvious lack of wealth among doctors.

In the group of which I am a member, the doctors, as trustees, have retained the privilege of selecting other members of the board of trustees. It has proved to be a valuable license. We have added to our numbers a practicing attorney, a judge of the Federal Court, an architect and a business man. It is a pleasure to give willing testimony of their moral support, their interest and encouragement in our professional activities and their full coöperation with no desire to direct or control the professional policy of the organization.

Group medicine is essentially a professional institution. Its units are founded, managed and developed by members of the medical profession with assistance from carefully selected lay-men which carries a knowledge of law and good business principles into the heart of the organization.

OBJECTIONS TO GROUP PRACTICE

A list of objections to group practice has been enumerated by Rexwald Brown of Santa Barbara, California (*American Medical Association Bulletin,* December, 1923). It includes seven indictments which are as follows:

(1) Unnecessary
(2) Too time consuming
(3) Too expensive for the patient
(4) Too mechanical
(5) Commercializes medicine
(6) Fosters cliquism
(7) Destroys the family physician

Let us consider this category of exceptions. First of all, he asserts that group practice is unnecessary. In its application here the word "unnecessary" implies superfluous, needless, and therefore a waste of time. It may signify that there is little if any need for the doctor to subordinate his individuality in the complex picture of modern medicine. Furthermore, the word "unnecessary" conveys the impression that the conventional fashion of applying our medical knowledge is sufficiently comprehensive and does not require revision or improvement. Lack of system and coöperation, together with the inaccessibility of the specialties in routine office practice, is sufficient argument to make this first objection untenable.

The second objection refers to the time consuming element. This is a true indictment. The average patient spends much more time in undergoing a complete examination in the machinery of a group than he does in the office of a general practitioner, or in the presence of a specialist. The history of a patient and the physical examination by a physician in his office does not suffer in comparison with the first phase of the examination in a group clinic. When complete, however, the examinations are not comparable. That conducted by the physician alone may be thorough and carefully made, yet in many cases there will be regional examinations which he is unable to make and for which he must send his patients to specialists Therefore, he will get along without information from supplemental examinations by specialists if he is obliged to enlist the services of those scattered throughout the city. Contrast this loose arrangement with a system by which the examiner can obtain all regional information desired from specialists who are associated with him under the same roof. Such information is sought more often because of its availability. The temptation to get along without special knowledge, obtainable only at long range, is one which few physicians escape. Far from being time consuming, group practice, when examinations are not overdone, is time saving.

The third indictment states that group practice is too expensive for the patient. This objection may be dismissed because, in the dispensation of medical services, there are no rules to cover costs. A group should be in a position never to slight an examination because of costs. The doctor should be encouraged to carry on his work with a due sense of economy and without worry over the balance sheet. It is as essential to have experts assist in making charges as it is to have experts for physical examinations. They can function to advantage only by intimate coöperation with others in the group. Thus charges will not be made too expensive for the individual patient and charity will be disbursed with due circumspection. The door of the clinic should be opened as widely for the poor as for the middle class, or the well-to-do.

That groups are too mechanical is a fourth objection. No doubt this criticism has its origin in the manner in which some clinics are conducted resembling an out-patient department of a large hospital. In certain large clinics some mechanical features such as waiting in line cannot be avoided. Many individuals prefer the tortures of the disease to waiting in line. It savors of the circus, the army and the daily dole. For the sufferers in search of relief sharp limits should be placed upon the ordeals of travel. The utmost care and consideration should be exercised in the conduct of such examinations as are essential. Oliver Wendell Holmes would not have the doctor add a single thorn to the patient's woes. In the examination of the sick man he wrote:

> "If your poor victim needs must be percussed,
> Don't make an anvil of his aching bust;
> (Doctors exist within a hundred miles
> Who thump a thorax as they'd hammer piles).
> If you must listen to his doubtful chest,
> Catch the essentials and ignore the rest.
> Spare him; the sufferer wants of you and art
> A track to steer by, not a finished chart.
> So of your questions: Don't in mercy try
> To pump your patient absolutely dry;
> He's not a mollusk squirming in a dish—
> You're not Agassiz, and he's not a fish."

"Too mechanical" is a justifiable criticism. In some degree we see it every day. And the larger and more successful the clinic, the more obvious become its mechanical features. At the Mayo Clinic, Dr. Plummer is devoting fully half his time in so shaping the organization as to prevent any loss of attention to the patient.

The fifth objection is based on the assumption that group practice commercializes medicine. If this term connotes the application of business principles as a part of the relationship with the patient, then commercialism to that extent has an important place in group practice. Bookkeeping, collections, accounting, auditing and financing combine to make one of the legs upon which the clinic organization advances.

On the other hand, if by "commercialism" is meant a conversion of ethical business relations into those devoted to trade or the exploitation of members of the profession for any purpose whatsoever, I claim that this practice is so unusual as to justify ignoring it altogether. Many of the groups that have failed found their insurmountable difficulties in the department of business administration. Owing to lack of training in matters of busness, few doctors conduct their financial affairs on a business basis. Doctors who render their bills methodically and use a budget system in their disbursements are few. Therefore, the scant knowledge in matters of business in general, among doctors, leads to liability of misunderstanding in group practice. This may imperil the organization. W. E. Fairfield in the *Illinois Medical Journal,* November 1919, said: "Lack of organization for business has kept medical men apart since the time of Esculapius. The barbers, who have always been inclined to the curative art, practice in groups, but doctors only occasionally get together, and then they are under the influence of a centrifugal force which tends to separate them; namely, lack of business capacity and a business system."

Sixth, the group fosters "cliquism." "Cliquism" is a colloquial term. It is the use of pigeon English to express "hifalutin" manners, or a form of overweening deportment of a fragment of the population. A more charitable definition as applied to medical groups would indicate the clannish spirit which develops inevitably among individuals who are intimately associated for a common purpose. In this sense, there is some justification for the reproach. Members of certain groups, or teams, are unaware of this "cliquism." It is, however, one of the hazards of group medicine. Like many other human frailties, "cliquism" as a form of vanity is promptly controlled when it is found that its continuance does not pay.

The seventh cause for alarm is that group practice destroys the family physician. This reflection permits of almost unlimited speculation. In some isolated instances, such as Sheboygan, Wisconsin, groups have been so successful that they have encompassed the territory in which they are located, thus seriously encroaching on the field of the general practitioner. In other localities such as Rochester, Minnesota, fully 75% of the work of the general practitioner comes to him by virtue of the presence of the Mayo Clinic. Many reasons have been and continue to be advanced for the supposedly sad plight of the general practitioner. Yesterday, the medical schools were denounced for requiring the students to devote so much time to research. Today the specialists and the groups are cited as threatening the domain of the general practitioner. Examples of failure among physicians can be found in every community, but they are not numerous. As yet there is no tangible evidence that the family physician is becoming extinct. During quiet periods, that may appear to be the situation to those specialists who have occasion to be anxious if the success of the general practitioner is threatened, but it is more fancied than real. In spite of the long period of depression in the textile industry, there are more general practitioners in our city than at any period of its history. Almost daily we see proof that they reign supreme. Warren T. Vaughan says that the family physician is not doomed to extinction. He will last and will remain the keystone of general practice. However, should the stronghold of our state and national associations become invaded, there would be reasons for apprehension. Neither medical schools, specialists or group practice have molested general practitioners, but it is obvious that numerous social organizations are invading some of the functions of the family physician. As William House has pointed out, people are on the alert for new forms of charity. Women's clubs, other civic and religious societies as well as industrial and insurance companies organize and manage clinics for all kinds of diseases; sick baby clinics, well baby clinics, district clinics, prenatal clinics, post-natal clinics, settlement clinics, child welfare clinics, and tuberculosis clinics. He points out that such an array of bargain service tends to pauperize the public and interferes with the private rights of the profession. These unite to create a spectre which may, to some extent, menace the standing of the family physician. If I did nothing more in this hour than to direct your thoughts toward this subject of state medicine while you have the ways and means of prevention, I would feel that my mission was crowned with success. There is reason to believe that organization of our ranks under the banner of preventive medicine and periodic health examinations will hold the political uplifters at bay.

CONSIDERATIONS IN FAVOR OF GROUP PRACTICE

What general considerations have prompted the development of group practice? What are the motives, the mainsprings, which activate serious minded physicians or surgeons to combine all the human and mechanical agencies recognized as essential in the prevention, diagnosis and treatment of disease?

Lewellys F. Barker (*Journal A. M. A.* March 18, 1926) comments on the ever increasing variety and complexity of services that medical men furnish in their efforts to satisfy the diagnostic, therapeutic and prophylactic wants of the people. Division of labor is a necessity. He believes that group practice is only a temporary phase destined to be replaced by something entirely different.

Warren T. Vaughan (*Journal A. M. A.* vol. xxi, September 1923) says: "The primary aim of group practice is service, particularly to the patient and to his family physician." He stresses the principle of coöperation not only among the members of the group, but of the group with the practicing physician. Group practice is a distinct advance. It is not a business.

Southgate Leigh, in a discussion of "Group Practice" before the Seaboard Medical Association in December, 1921, said that even the most sensible of patients do not understand why they have to be sent from one place to another, feeling that the man whom they consult should take care of the entire situation; that to meet this situation group practice has developed; that it is not a new thing, but simply a development which is being forced upon the profession by the necessities of the times; that if we realize fully how short life is, and how much we may accomplish by united effort, such minor matters as envy and jealousy will soon be overlooked.

Dr. William Mayo has made these significant remarks: "The difficulty which we have in the practice of medicine at the present time is, we have too much knowledge; it is not organized. Group medicine, therefore, does not consist merely in having everything that can possibly be done in the way of examining the patient, but there must be something essential behind that if we are going to be able to make correct diagnoses by the least expensive methods we can from the standpoint of the patient. Furthermore, our scheme is a little different from others in existence. I am on a salary; my brother is on a salary. All of the moneys that are earned over and above a just return to those who are in the group go to create an endowment. We take it that we are trustees of the sick man's money, that we have a right to do with the money those things that are best for his interest, and then the balance should be expended to take better care of his descendants. Then these endowments are made permanent."

Finally, he adds, "Group medicine, properly considered is not a financial arrangement, except for minor details, but a scientific coöperation for the welfare of the sick. Medicine's place is fixed by its services to mankind; if we fail to measure up to our opportunity, it means state medicine, political control, mediocrity and loss of professional ideals."

In one of his valedictory addresses, Sir William Osler said that in every town of fifty thousand inhabitants a good medical clinic should be built up.

INFLUENCES AFFECTING GROUPS

These men whose opinions I have presented have made it clear to me that, first of all, they have been public servants; that they are students and not promoters of group practice; that in a temperate spirit they have laid before the medical profession the records of their activities, openly, ably and without fear; that they are proceeding from day to day as investigators, reviewing, sifting, searching and analyzing for the purpose of finding better methods of dealing with the ills to which flesh falls heir.

It would be folly to advocate group practice as a general proposition. During the first five or ten years of practice, most doctors become permanently established by occupying office space in their homes. The expediency of this arrangement has been questioned, but as an old time custom still in use, it has the salient advantage of being convenient. Few doctors who have their offices attached to their homes ever move into office buildings. Any wholesale attempt to take doctors out of their home offices and organize them into groups would disparage the orderly effort to solve the problem of group medicine and, more than likely, would result in confusion and failure. Because of the struggles experienced by most groups in keeping intact and going, it is not likely that there ever will be a stampede in the direction of group practice. If the doctors who have been graduated for a decade or more are not eligible for group practice, who is? Not all in this class are ineligible by any means, but without doubt, for the vast majority the change takes on the form of a venture, the risk being somewhat in proportion to the number of years the doctor has been in practice alone. Group practice is essentially a young man's enterprise. He should acquire the spirit of club life during his student career. The man who, as a student or physician, has been estranged from his fellows by working alone cannot be a member of a group without experiencing many sorrows and causing a few pangs. In order to fit men to undertake this form of practice it becomes essential to begin the molding process during student life in the medical school. This is one of the many welcomed tendencies to be expected from living conditions in the new dormitory at the Harvard Medical School. Even now, I believe that few doctors realize how much will be contributed toward better understanding in the profession by four years of intimate association among the students in this building. Naturally, group medicine will be one of the beneficiaries.

The original personnel of a group should be friends possessing a bond of sympathy and stable companionship. Their interests, aims and ideals should be identical. They should be willing to subordinate ndividuality and make sacrifices for their common purpose; they should be charitable toward their co-workers whose faults are inevitably exposed more often than when practicing alone. Let there be one among the beginners who believes that "excessive rudeness is a mark of genius, that consummate insolence is a mark of consummate skill" and the formative period of a group will become a trying ordeal, if not a failure. In Dr. Holyoke's day there was no place in a group for the "medical buck," nor is there any now.

ADVANTAGES OF GROUP PRACTICE

Among the advantages which the doctors derive from group practice are: First, incentive to thoroughness in the examination of patients. Much of this is due to the immediate availability of those representing all the specialties. Second, the limitation of responsibility to one's own field of specialization. Third, the opportunity of becoming familiar in some degree with up-to-date equipment used in all departments. Fourth, the divorce of business details from medical practice, with opportunity to get a good insight into business in the open field. This last is very desirable, and a strong argument in favor of group practice because the details of business as applied to charges, purchases, and investments are a burden to the physician. Fifth, regularity of hours. Cardio-vascular disease accounts for more than 50% of deaths among physicians. This is due, no doubt, to wear and tear resulting from long hours of duty, loss of sleep, irregular meals and worry. There is much mental suffering and almost endless interruptions in the life of the physician. Group practice is not a panacea for these, but it provides time for the compensatory influence of rest and recreation.

Sixth, vacation without loss of income. This idea is too fascinating and alluring to dwell upon. It is pertinent, however, here to refer to an experience of a recent President of the American Medical Association. By an intelligent group arrangement of his co-workers in a surgical practice, he gave without an appreciable loss of income, between two and three months of his valuable time in promoting the interests of that magnificent organization which is the sheet anchor of the medical profession in America.

Seventh, further study without loss of income. Men in other professions and in business, travel with expenses paid and without loss of income. The doctor, on the contrary, when engaged in travel and study pays his own expenses, loses his income, and more. In his ambition to render better service, he suffers a double penalty. Eighth, the development of a pension fund to take care of old age. If the doctor is not in a group and he gets little or no rest, he is not likely to live long enough to need a pension.

Ninth, the development of group insurance to take care of the family. Dr. F. M. Turnbull has written upon that intangible commodity known as personal service. In referring to his study of this important phase of group practice, V. N. Leonard calls attention to "good will" as the physician's greatest asset while he is in active practice. "On death or retirement, his greatest asset becomes worthless. By a well conceived plan, it becomes perfectly practicable to conserve to each member of the group, and especially to his heirs, in the event of his decease, the just fruits of his labors and attainments. This is accomplished through the successor of the deceased, who is enabled to purchase the department and its earnings for the first few years under the new management. The plan becomes possible of successful operation by the members of a coöperative group of the departmental type for the reason that good will of any of its departments, backed by the good will of the organization becomes a very real and tangible asset; so real, in fact, that its actual cash value can be readily and accurately calculated at the end of a few years under the new management."

Finally, in addition to the obligation which the physician should discharge toward his family, his patients and his profession, there is the paramount debt which he owes his country in time of war. No matter how much this service is disliked, it must be met promptly and unflinchingly. The next conflict of nations probably will be a war of chemistry. In every European country the extravagant measures now in progress are ostensibly "for defense only." But if matters ever again leave the stage of argument, all the material collected under the guise of "defense" will be used for attack, as before. The war game never changes except for the worse. Therefore, with the possibility of such emergency service always present in the foreground, every group should be double staffed, in order that one half its personnel could volunteer at once for service in the mobile units of the medical corps, while those remaining would provide a well organized unit to which could be added a sufficient number of assistants to convert the home outfit into a base hospital. These changes can be made in such a manner as to provide, almost without delay, a double functioning body for the medical department of the army.

With these merits and demerits, advantages and disadvantages, as well as its potential possibilities for magnificent service, I commend group practice for your further consideration and study.

ORIGINAL ARTICLES

LISTER: 1827-1927*

An Address Before the Springfield Academy of Medicine, April 12, 1927

BY DAVID CHEEVER, M.D., F.A.C.S.

ONE HUNDRED years are not many in the life history of mankind, but those just ended embrace a period more replete with physical and scientific progress than any other in recorded history. The revolutionary upheavals of the latter part of the eighteenth century freed men's persons from political bondage and their minds from the shackles of an intellectual tradition; discoveries in the physical sciences opened as if by magic new fields of knowledge, and natural forces, for the first time controlled, brought undreamed-of power. The arts, except music, and the humanities lagged, while the material elements of men's lives leaped forward.

Two branches of science were no exceptions,—two directly opposed yet strangely closely related branches—that of killing and that of healing, and each reached its zenith of perfection in the holocaust of 1914-1918. It is well to be reminded of the nobler one, and to be made to pause and consider its wonders by the one hundredth anniversary of the birth of one of its greatest apostles, Joseph Lister.

What soil gave birth to such a man? His ancestors were yeomen of Yorkshire who joined George Fox's Society of Friends, and later became tradespeople in and about London. His grandfather was a watch-maker and later a wine merchant, who prized education and saw to it that his children were taught Latin and French as well as the more ordinary branches. His father, Joseph Jackson Lister, was a man of superior qualities, highly educated, incidentally very successful in the conduct of the family business, but chiefly interested in natural science. He married a woman of charm and intelligence, and established in a rural suburb of London a substantial home where the best traditions of the Quakers prevailed. Here life was simple, unaffected, pure, with comradeship and sympathy between parents and children but with an absence of the wasting and unfruitful pursuits and ambitions of the world of fashion. "Life was a gift to be employed for the honor of God and the benefit of one's neighbor." His avocation was the study of optics; he perfected the achromatic lens which led so largely to the perfection of the microscope; he thus became one of a circle of learned and scientific men and a Fellow of the Royal Society. He continued his self-education until old age, and indulged also no mean talent in art. His weekly, or more frequent, letters to his son during his long life reveal a wise, tolerant, sympathetic and always high-minded man, gifted with intuition and tact.

Into this circle was born the fourth child Joseph on April 5, 1927, the logical scion of such a stem. The boy was healthy, normal in his love of sport, and both able and wililng to take high rank at school. He showed an early inclination for natural history; he made collections, dissected birds and animals and mounted their skeletons. Before the age of fourteen he declared that he intended to become a surgeon. There was no medical tradition in the family so that this resolve seems to have been the expression of a natural taste. The Church, the army and navy and to a less extent the public service were closed to members of the Society of Friends, and their views were not likely to lead them into the legal profession. Usually agriculture or trade attracted them, while medicine appealed to those with scientific tastes.

As a Friend, the sectarian higher institutions of learning were barred to him. His natural destination was University College, London, a non-sectarian institution attended largely by youths of serious purpose, where hard work and little play were the rule. The A.B. degree was won handsomely, but at the expense of a temporary nervous breakdown. His medical course was entered upon in 1848 under teachers of considerable eminence, of whom Wharton Jones, Professor of Ophthalmology, and Sharpey, Professor of Physiology, influenced him most. The impression he made on his contemporaries was that of an able, serious-minded and rather austere student not easily distracted from his work. A colleague of those days writing of him said: "He, in the total, excels anyone I know or have known in bright promise for the future." In due course he became house-physician and house-surgeon at the University College Hospital, where he soon showed his power of accurate observation, his taste for experimental and research work, and his eagerness to communicate and debate his views. He read papers before student societies and debating clubs. He did original microscopic work of a high order on the involuntary muscle fibres of the iris, confirming and extending Kolliker's researches; he demonstrated the muscles of the hair follicles of the scalp, and did perhaps the first experimental work on the absorption of chyme by observation of the lacteals in the mesentery of the mouse. And all this without the aid of microtome or tissue stains or technicians, and while discharging acceptably the duties of house-surgeon in a metropolitan hospital!

After nine years of college, medical school and hospital interneship he received the degree of M.B. of the University of London and the Fellowship of the Royal College of Surgeons, and at the age of twenty-five was ready to begin the practice of his profession.

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*He who writes of Lister must gratefully acknowledge his dependence on Godlee's "Life."

THE EDINBURGH PERIOD

His mentor, Sharpey, however, advised a trip to Edinburgh,—advice which requires a word of comparison of medical education in the two cities. The London schools were proprietary affairs, each grafted upon a hospital but without university connections. There were distinguished but also many mediocre men upon their faculties. The instruction in the fundamental medical sciences was often second-rate. The schools were small, and between them existed often a form of rivalry which led to contempt for and ignorance of each other's work, rather than to healthy competition toward a common goal. With many noble exceptions, those who practiced in London had commercial rather than scientific aims. In Edinburgh was to be found the true university plan of education with a medical school as one of its integral parts. Though the city was so much smaller, its single school had more ample facilities and richer clinical opportunities; the various faculties were filled by scholars of world-wide reputation, and the prevailing atmosphere favored the cultivation of scholarship. The outstanding figure in surgery was the occupant of the clinical chair, James Syme, acknowledged to be the leader of British surgery,—able, inspiring, a great teacher, the kind of man likely to attract a following of ambitious and idealistic young men.

Armed with a letter of introduction to Syme, Lister went to Edinburgh for a month of observation. There was mutual attraction between the veteran and the recruit. An appointment as supernumerary house-surgeon in Syme's service at the Royal Infirmary was proposed and accepted. Miraculously the responsible post of house-surgeon became vacant through illness and Lister succeeded to it, not feeling that it was in the least unworthy of a Fellow of the Royal College of Surgeons. Syme treated him as an equal, while the twelve dressers accorded him enthusiastic support and called him "Chief." He busied himself, as usual, in fulfilling the obligation of him that hath to give to him that hath not by laboriously reporting Syme's lectures for the *Lancet*. He began his life-long studies of inflammation by observations of its early stages in the web of the frog. Syme granted him the experience of independent operating, and he wrote to his father: "I love surgery more and more." And again: "I trust I am honest and a lover of truth; I know I do not possess brilliant talent, but I must try to make up as much as I can by perserverance."

Now came momentous decisions:—to apply for a post as assistant-surgeon to the Royal Infirmary made vacant by the death in the Crimean War of its incumbent; to advertise and give an extra-mural course of lectures on the "Principles and Practice of Surgery"; and—most fruitful for his future happiness—to offer himself to his patron's daughter, Miss Agnes Syme. In all these three proposals Fortune smiled on him, and only withheld full measure of happiness by requiring him to withdraw from the Society of Friends, so dear to the family tradition. Marriage outside the Society was not permitted, so he joined the Episcopal Church, but always in his letters home he retained the intimate personal form of address customary among the Quakers. After a month of intensive work at dissection in Paris, the extra-mural course was begun in November, 1856, the class consisting chiefly of the twelve dressers, one of whom wrote: "He taught us more of pathology than of surgery:—the general impression was that he was a great thinker." In 1856 came his marriage and a three months' honeymoon in Europe, devoted by this incorrigible glutton for work to perfecting himself in German and Italian (he already spoke French well), and observing the practice and meeting the medical celebrities at most of the clinics in Europe, where this young man was already beginning to be known by his published work. Here it is appropriate to say that his marriage brought him perfect happiness, and a companion who through a long life gave him help and encouragement and sympathetic understanding in all his pursuits.

The autumn of 1856 found Lister, not quite thirty years of age, settled down to housekeeping in Edinburgh, his sign upon the door, his appointment as assistant-surgeon to the Royal Infirmary in his pocket, his extra-mural lectures in full swing, and his spare time fully occupied with fertile research in the subjects which most interested him,—inflammation and the coagulation of the blood. Here let us leave him for a moment, to consider the contemporary picture of the art and science of surgery.

SURGERY BEFORE LISTER

Lucas-Championniere, one of Lister's earliest disciples in France, once said: "Surgery has only two periods: first, that before Lister, and second, that since Lister." This is scarcely—perhaps not at all an exaggeration. Certainly it would not be were Morton's name coupled with Lister's. Such a change was wrought by the work of these two men that in spite of centuries of gradual change and relative progress prior to 1846, the whole aspect of surgery before that date has one general character, and the whole of it since then has a totally different character. Let us take for granted the universal use of anaesthesia and its effect on surgery, and describe the situation as it existed before antisepsis. This picture has often been drawn, and is familiar enough to every student of the subject.

Every wound, whether made by accidental trauma or by the surgeon, was likely to become septic with disastrous consequences. Elective surgery, except in regions where experience showed that sepsis was not likely to lead to serious results, was generally avoided. Imperative surgery was undertaken with courage, but with the knowledge of appalling risk. In certain parts of the body surgery had not had opportunity to develop at all, even under imperative conditions, because it was followed so surely by death that it had no justification. Thus the three great cavities—the cranio-spinal, the thoracic and the abdominal—were practically forbidden ground. A depressed compound fracture of the skull might be elevated and rarely a small trephine opening made to evacuate supposed blood clots; an intercostal incision might be made to drain empyema, but the mortality in a patient over forty was said to be 100%. A few daring operators were emptying and withdrawing through a small abdominal incision simple ovarian cysts. An occasional Caesarian section was done. Appendicitis had not been described, but its ancestors—typhlitis and peri-typhlitis and peritonitis—were treated with opium and local applications. The surgery of the stomach, the bile passages, the spleen, pancreas, small intestine and colon was unknown. Abdominal gynecology except as noted above did not exist. Hernia was treated by the truss, or with hesitation and ill success by various minor procedures designed to shrink or cause adhesions in the sac. The great joints, unless affected by disease requiring excision or amputation, were inviolate. Of what then did operative surgery consist? The repair of wounds, amputations of the limbs for trauma, of which by far the greater number were for infected compound fractures, for osteomyelitis and for tuberculous disease; the ligature of vessels in continuity for secondary haemorrhage or aneurism; the incision of abscesses; minor operations for the cure of reducible hernia and division of the constricting ring in the strangulated variety; the laying open of fistulae in aniis and excision or cauterization of haemorrhoids; local repairs of the vaginal outlet; division of urethral stricture and cutting for stone through the perineum; amputation of the breast for cancer; the excision of tumors of the face, mouth and jaws; the correction of some congenital deformities of the limbs by manipulation and the cautious subcutaneous division of tendons;—these constituted the operations of the period with the addition of an occasional foolhardly excursion into forbidden fields. A pre-Listerian might visit a great modern clinic for a week and see a hundred operations, and scarcely one with which he was familiar.

It was expected that nearly every operative wound would become septic and the mortality was appalling. T. Spencer Wells, writing in 1864, gave the mortality of major amputations as 45% in Paris, 36 to 53% in Glasgow, 50% in Edinburgh, 25-35% in London and in smaller provincial hospitals sometimes as low as 13%. But local wound infection was not the darkest side of the picture. The four septic hospital scourges, pyemia, septicaemia, erysipelas and hospital gangrene were everywhere rife, especially in old hospitals which had been long in use and were over-crowded and dirty. Frequently the universality of these diseases in a surgical ward made it necessary to suspend all operating for weeks or months. Sometimes in desperation a ward would be burned to destroy the contagion. Erichsen advised that all surgical buildings be of temporary construction and that they be periodically razed to the ground. With the first three of these scourges we are familiar, not in epidemic form but as isolated infections, practically unknown as the sequelae of clean operations, but occasionally occurring in non-operative wounds in spite of efforts at antisepsis. Hospital gangrene, however, is unknown to us; we do not know the nature of the infection or of its pathological character, though we may surmise that it was not a clinical entity but a malignant type of various forms of wound infection, including probably gas gangrene.

The manner of conducting an operation and of treating the wound, especially as regards cleanliness, probably varied very much as lay individuals vary in the same respect. There was no special preparation of the operative field or of the hands of surgeons and assistants; the instruments were taken from the cabinet and laid out without other cleansing; the surgeon wore an old coat which he was willing to have spattered with blood and secretions and which was kept hanging in the operating room; we are even asked to believe that he took pride in its bloody filthiness as a gauge of his experience, just as a German student keeps mortifying his sabre cut so that his valour may be measured by the scar. A basin or two of warm water in which to wring out the sea sponges, and a few towels were on hand. Bleeding was stopped by compressing and twisting small vessels, and by ligating larger ones with waxed silk, one end of which was cut short and the other left long. When the wound was closed these long ends were gathered together and brought out at one angle to serve the double purpose of a drain, and of a means to remove them when they had cut through. After some days they were gently pulled, at the daily dressings, until they came away. The wound was closed with wire, or silk, or silk-worm gut stitches widely spaced to permit of free discharge, but nevertheless it was often necessary to re-open the wound to evacuate blood clot and give free drainage. The occasional healing by first intention was hailed as a miracle but this was always impossible when ligatures were used. "Laudable pus," which meant good honest thick pus, probably due to the staphylococcus or pneumococcus, which flowed out freely instead of burrowing in the tissues, and after discharge was established caused few constitutional symptoms, was welcomed, whereas the less praiseworthy variety —thin and scanty, and very likely due, we may suppose, to the streptococcus—was considered a danger signal. Secondary hemorrhage when the septic ligatures came away was frequent and often disastrous, requiring ligature of the vessel in continuity, and sometimes recurred. Final healing, if the patient did not die, was by granulation and slow cicatrization.

The word "sepsis" is taken from the Greek *sepsis* meaning rotting or putrefaction and indicates sufficiently the view as to the character of wound infection. "Antiseptic" occurs in medical literature at least one hundred years before Lister and meant, clearly enough, a substance which resisted putrefaction. Many such substances had been known and utilized for years, such as benzoin, alcohol, glycerine, chlorinated soda, chloride of lime, and iodine. Certain coal tar compounds were recognized after 1815 as valuable antiseptics, especially carbolic acid. These agents were widely used in the crude measures of the time to promote sanitation, but inasmuch as the cause of wound sepsis was unknown, they were used merely to combat putrefaction when it became established, and hence were ineffective and had little vogue. The view was generally held that wound infection, and especially the four septic hospital scourges, was due to the atmosphere,—to tainted air. It was well known that operations performed in the country in small hospitals or isolated houses were much less frequently complicated by sepsis than those in the crowded wards of city institutions. Every surgeon had his favorite method of dressing a wound to promote healing. Some favored the "occlusion" method by which the wound was sealed by adhesive plaster to prevent the entrance of tainted air. This succeeded in the rare case where no pyogenic organisms had been introduced, but usually this happened and the wound had to be widely opened. This led others to favor the "open" method from the beginning. The "water dressing" took advantage of the fact that by keeping a wound moist its edges were less likely to adhere and prevent the drainage of noxious discharges, and a further development of this idea was the continuous bath in which the patients sometimes lay for weeks at a time.

Such was the state of surgery which confronted Lister when he entered the lists as a member of the staff of the Edinburgh Royal Infirmary. His first public operations before the students were on February 25, 1857. There were two: an amputation of the great toe, and one of the bizarre procedures of the period for the cure of hernia, involving an effort to transfix the neck of the sac with a needle, but without any incision. As he awaited, outside, the assembling of the students, he felt anxious and discomposed at the prospect of facing them, until, as he says: "I recollected that there was only one Spectator whom it was important to consider." Again he says: "I felt very nervous before beginning, but when I got fairly to work, this feeling went off entirely and I performed both operations with entire comfort, . . . everybody congratulated me and the students cheered very warmly." The modern surgeon, safeguarded from disaster by the discoveries of the trail-breakers, finds something half pitiable and half humorous but wholly touching in the picture of this grave young man of thirty drawing strength from the Creator for the ordeal of a minor operation, for whose performance he is accorded the plaudits of the onlookers. Tempora mutantur!

Clinical teaching, research and private practice filled every moment of the next few years. He continued his study of inflammation and of the phenomena of coagulation of the blood, showing by animal experimentation that blood in contact with the un-damaged endothelium of the vessels will not coagulate even though it stagnates, but that contact with "ordinary matter," (a foreign body, or diseased tissues) induces coagulation; therefore the injury to the intima in tying a vessel is an essential element in haemostasis. We know very little more about this subject today. He studied methods of bloodless surgery and worked out a way of obtaining local ischemia by elevation of a limb before applying a tourniquet showing that this was not due merely to gravity drainage but also to vaso-motor constriction of the arteries. He invented a tourniquet to compress the aorta (almost simultaneously with, but independently of, Pancoast of Philadelphia) and had the pleasure of using it first to enable Syme to operate successfully on an aneurism of the iliac artery. His work and interest were always along physiological lines, and "his constant endeavor was to explain phhenomena and base treatment upon this wide scientific foundation." He was becoming widely known now both in great Britain and on the Continent; he gave lectures on some of the permanent foundations and wrote the monographs on amputation and anesthesia in Holmes' System of Surgery,—the only contributor outside of London.

THE GLASGOW PERIOD

In 1860, after seven years in Edinburgh, he made a canvass for and obtained the Regius Professorship of Surgery at the University of Glasgow. This appointment by the Crown furnishes opportunity to infuse new blood into an institution and prevents stereotyped tradition. Glasgow was a much larger city than Edinburgh, with a large industrial population furnishing much clinical material; the medical profession was only less intellectually and socially distinguished than that at Edinburgh and the University circle scarcely less brilliant. The step from the assistant-surgeoncy of the Infirmary and lectureship in surgery at Edinburgh to the full chair at Glasgow was a notable one for a man of thirty-three. At the induction ceremony he delivered, as required by ancient custom, a Latin dissertation, written the night before with the devoted help of Mrs. Lister who sat up with him all night, writing to dictation, copying, and consulting the dictionary. The hero of the occasion carried all before him and received a great ovation; the wife sat at home worrying as to how his gown would fit and how he was getting on!

The wards of the Glasgow Infirmary furnished abundant food for anxiety if not despair on the part of the conscientious surgeon. Though not old, they were ill-ventilated, and usually over-crowded, often with patients suffering from extensive injuries received in the dock-yards and iron foundries of the Clyde. They were thought to be particularly unhealthy because of the near presence beneath their foundation of pits wherein were buried the victims of a cholera epidemic of some twenty years before. Suppuration was rife in traumatic as well as surgical wounds; pyemia, erysipelas anad septicaemia levied their constant toll, and hospital gangrene swept away its victims in epidemics which often necessitated closing the wards. Lister was in frequent conflict with the managers over the question of limiting admissions to prevent overcrowding.

To one who studies the situation in 1865 it is apparent that the fact of the relationship of micro-organisms to infections and of the possibility of their control by antiseptics was gradually being uncovered by different searchers and that the final demonstration could not have been long delayed. Since the time of Aristotle (everything goes back to Aristotle!) the existence of infinitely small invisible organisms had been suspected. John Hunter's accuracy of observation convinced him that air was not the essential factor in contagion. If so, when the end of a fractured rib wounded the lung and caused a pneumothorax, or an extensive subcutaneous emphysema, why did not the air then introduced into the tissues cause suppuration? Was the urethra, when infected with gonorrhoea, any more in contact with the air than under ordinary circumstances? Appert in 1810 described the preservation of food by bottling and heating in boiling water. Cagniard-Latour and Schwann showed almost simultaneously in 1837 that yeast was a living organism, probably a plant. Schwann showed also that the action of yeast could be prevented by heat; and that putrefaction was due to living organisms which could be similarly destroyed. Liebig and von Helmholtz maintained the non-organic nature of fermentation and by their great authority arrested progress for the time, but men's suspicions everywhere were aroused. Oliver Wendell Holmes, in 1843, in a paper "On the Contagiousness of Puerperal Fever" maintained that this infection was carried from patient to patient by the attendant, or that it might be derived from erysipelas, and urged the disinfection of the hands with chloride of lime. In this he anticipated Semmelweiss, who, independently, but later in 1846-1848, reduced the mortality from puerperal fever in his wards in Vienna by requiring students coming from the performance of autopsies to disinfect their hands in chloride of lime before making vaginal examination, noted the identity of the symptoms of septicaemia in a colleague who died from an infected wound inflicted during the performance of an autopsy on a puerperal fever patient, and definitely enunciated his conviction that this disease was an infection carried from one patient to another by physical means. And then came Pasteur! the product of whose mind struck a flame in Lister's intellect, as flint and steel ignite fire. Pasteur demolished Liebig's teaching of the non-organic nature of fermentation, demonstrated the organism which turned milk sour, discovered anaerobic organisms and those which gain their oxygen from the decomposition of organic substances, and then passed to the study of putrefaction, proving that it does not occur without the agency of micro-organisms, which may be destroyed by heat or other agencies, or separated from the air by filtration. In 1862 he proved that spontaneous generation was a myth. In 1864 he assured the Emperor Napoleon that "all my ambition is to arrive at a knowledge of the cause of the putrid and contagious diseases." A compatriot of Pasteur, Lemaire, a pharmaceutical chemist, investigated carbolic acid refined from coal tar and wrote a book on it (1863-1865) in which he accepted the germ theory of putrefaction and advocated carbolic acid as a disinfectant and preventive. This created no revolution of treatment in France, presumably because the relation between suppuration and putrefaction was not suspected.

Everywhere surgeons were groping for the key. At the first operation performed at the Boston City Hospital, June 1, 1864, chlorinated soda was used as a dressing and disinfectant. Spencer Wells, who was performing ovariotomy with 30% mortality, anticipated Lister in inferring the premises on which the antiseptic principle was to be founded. In an address before the British Medical Association in August, 1864, he declared his opinion that the "atmospheric germs which Pasteur has shown to exist may find their most appropriate nutrient in the secretions from wounds or in pus, and they so modify it as to convert it into a poison when absorbed; they may enter the blood and develop themselves, effecting deadly changes in the circulating fluid." He further cited Polli of Milan as showing that the injection of pus into the blood causes pyemia, and as inquiring whether it might be possible to render the poison inactive or neutralize it without such an alteration of the properties of the blood as would endanger life. Sixty-five years later this problem is equally urgent and still unsolved! Wells recommended that hospitals should be in small units, that contagious diseases should be isolated, and that scrupulous cleanliness should be enforced in everything surrounding a patient. He did not definitely link together putrefaction, suppuration and antisepsis.

Lister, since 1861, had been teaching that "the occurrence of suppuration in a wound is determined simply by the influence of decomposition," and that wound infection cannot occur without it; that decomposition is set up by the air, but is not caused by the gases alone of the air. In 1865 his colleague, Professor Anderson, a chemist, drew his attention to Pasteur's studies of fermentation and putrefaction, and to his demonstration that putrefaction is in fact a fermentative process caused by the growth of minute microscopic organisms which can be carried by the air. Lister's mind leaped to a solution of the mystery. If suppuration was caused by putrefaction and the cause of putrefaction was known and could be prevented in the laboratory, then the same means ought to be effectual in wounds. He remembered what he had read of the use of carbolic acid in disinfecting the sewage of the town of Carlisle, and decided to try that. In March, 1865, he first used carbolic acid in the treatment of a compound fracture, but the first good test case was in May, 1866, when a bad compound fracture of the leg was disinfected by carbolic acid and a carbolic dressing applied. The wound healed kindly without suppuration or evil sequelae. His first paper on this subject, "On a New Method of Treating Compound Fracture, Abscess, etc., with Observations on the Conditions of Suppuration," appeared in the *Lancet*, March-July, 1867. This epoch-making communication reported nine cases of compound fracture, with one death from secondary haemorrhage and the loss of one limb from hospital gangrene,—an unparalleled record under the conditions prevailing in the Glasgow Infirmary. He pays tribute to the work of Pasteur, saying: "Turning now to the question how the atmosphere produces decomposition of organic substances, we find that a flood of light has been thrown upon that most important subject by the philosophic researches of M. Pasteur . . ." He was persuaded by Syme to make a more formal statement before the British Medical Association, and did so at Dublin, in August, 1867, in a paper "On the Antiseptic Principle in the Practice of Surgery," in which he said: "I can say that a solution of carbolic acid of a strength of one in twenty parts may be relied on to destroy any septic germs which may fall upon a wound during the performance of an operation." He went on to state that ligatures could be cut short and left in without fear of secondary haemorrhage or inducing an unhealthy state of the wound. His previously unhealthy wards had become healthy, and during the last nine months not a single case of pyemia, hospital gangrene or erysipelas had occurred in them. He writes to his father: "Surgery is becoming a different thing altogether."

The first deliberate application of the new principle to a clean surgical wound was in April, 1867, when he removed a tumor of the arm and obtained primary healing. In July, 1868, he ventured to open the healthy knee joint:—"I had carbolic acid dripped on the wound as I cut and drew out the cartilage under cover of an antiseptic rag,—the patient has not had the slightest pain or symptom of any kind."

The question of ligatures next received his attention. We have seen that at Dublin in 1867 he declared that silk ligatures could be cut short and left in, but he evidently did not feel sure enough of his ground to risk a serious case. As was his custom, he turned to animal experimentation to secure proof. In December, 1867, he tied the carotid artery in a horse with silk steeped in carbolic acid, cut the ends short and obtained primary healing without suppuration. He promptly repeated the procedure in a woman, successfully performing the rare ligation of the external iliac artery for aneurism. The patient died later from rupture of another aneurism, and examination showed the artery satisfactorily occluded by an organized thrombus at the seat of ligature, but the silk was partially disintegrated and lay in the midst of a small cavity filled with puriform material. The inference was justified that the irritating qualities of the silk had prevented it from being permanently and harmlessly encysted, and Lister cast about for some more bland material.

In the course of his observation of aseptic wounds he had been struck by the disappearance by absorption of masses of dead organic material. For instance, when an artery was tied with silk, the cut end of the vessel distal to the ligature disappeared as such and was replaced by organized tissue. Why could not absorbable organic material be used for the ligature itself? Catgut and animal tendons of divers kinds had been used by surgeons at various times for years. Among others Physick and Dorsey in 1816, in Phiadelphia, had employed thin strips of kid and buckskin, and had succeeded in cutting them short and obtaining healing without wound irritation, but in general these materials before the antiseptic era had not proved as useful as silk. Lister turned again to the experimental method to prove his point. During the Christmas vacation at the old home in Upton, in 1868, his father's little museum was turned into an operating room, a calf was chloroformed and the carotid artery was tied with catgut which had been soaked in carbolic acid. One month later the animal was sacrificed, and examination showed the vessel satisfactorily occluded and the ligature invaded by and changed into a new organizing tissue, with no sign of infection. At once Lister applied the new method to operative wounds with complete success, conducting endless painstaking experiments in ways to cure and strengthen the gut while it was being made antiseptic. The old silk ligature ceased to have any place in his practice, because the aseptic method was not sufficiently perfected to permit it to be left permanently in the wound.

THE SECOND EDINBURGH PERIOD

Syme, who had continued the most intimate and sympathetic interest in Lister's work, was forced by illness in 1867 to resign the chair of clinical surgery in Edinburgh. A vacancy in what was perhaps the premier surgical post in Great Britain could not fail to have attraction for Lister, and when the students unanimously petitioned for him to become Syme's successor, the issue was soon decided. Glasgow had afforded him splendid clinical material and had treated him well, but the work was arduous and exacting and routine threatened to embarass research. In Edinburgh, the smaller city afforded him less but still sufficient hospital work. He gave two clinical lectures a week, without notes, to an amphitheatre crowded by students and inquiring visitors; daily at noon he conducted the ward visit where he carried out with meticulous care the details of antiseptic dressings; the afternoon was devoted to his rapidly increasing private practice, and what remained of the day and the evening was filled by experimental work and writing, with the devoted wife acting as laboratory assistant and notetaker. The ensuing nine years were the happiest and most brilliant of his life. Adored by his students, worshipped by his patients, addressed and visited by eminent surgeons from all over Europe, he succeeded nevertheless in concentrating his energies on the perfection of his method and extended his researches into allied fields in physiology and bacteriology. He began a correspondence with Pasteur, who in his cordial reply said that it was an enigma to him how a busy surgeon and teacher would devote so much time to such exact and painstaking researches. Always he made it a point to spread his doctrines by writing and by addressing scientific bodies.

It is unnecessary to detail the various steps in the elaboration of the antiseptic method;—the irrigation of the wound with carbolic acid, the occluding dressings with "antiseptic putty," the lac plaster, the gradual turning toward absorbing rather than protective materials. Fabrics were canvassed for suitable stuff, with the result that what we know as gauze was discovered and substituted for cloths, rags and lint. Rubber drainage tubes, originally used by Chassaignac, were re-introduced, for every wound was drained. The carbolic spray, at once the least necessary and the most striking part of the new armamentarium, was introduced in 1871 and used by Lister until 1887. His belief in the importance of air-borne infection was sound, but as we know exaggerated, although it is a mistake to suppose that he did not appreciate that infection was also introduced by instruments, the hands of the operator and anything which came in contact with the wound. The knowledge of the existence of air-borne infection led perfectly logically to the plan to sterilize the atmosphere surrounding an operation by permeating it with a mist of diluted carbolic acid, which was accomplished at first by a hand-spray with a rubber bulb, and later by apparatus worked by a lever, or a foot bellows, or by steam power. A contemporary account of the operating room of the Massachusetts General Hospital describes the power-spray, and the added precautions of a hand-spray in the hands of Dr. Thomas Dwight, later much-honored Professor of Anatomy at Harvard, then a slender and very agile youth, whose business it was to dart about among the operating group spraying here and there where fancy indicated the need. Doubtless the spray contributed to antisepsis, and did away with wound irrigation, but the surgeon and his assistants came from the operations with the skin of the exposed parts blanched and numb, a raging head-ache, and often with haematuria from renal irritation. Nothing illustrates better Lister's keen observation than his realization that there were other factors in the immunity of wounds to sepsis. His colleague Thomas Keith, like Spencer Wells, depended on simple cleanliness and was performing ovariotomy with low mortality. Lister realized that the peritoneum must have peculiar resisting powers and advised against the use of the spray in these cases, on the ground that it would produce irritation and an exudate which might favor the multiplication of bacteria. Lister at once accepted Metchnikoff's demonstration of phagocytosis in 1883, and with increasing confidence in the natural protective mechanism of the body and a realization of the small part played by air infection, the spray was finally abandoned.

RECEPTION OF THE ANTISEPTIC PRINCIPLE

The reception in Great Britain of Lister's teachings betrayed the jealousies and rivalries, the scepticism and stupidity of human kind. In our days we are so accustomed to witnessing the destruction of tradition by advancing science that discoveries are apt to be accepted and exploited before they have been seasoned by experience, but in 1870 medical tradition was conservative. His students, dressers and immediate colleagues warmly espoused Lister's doctrines, but critics were not wanting. Older men who had not studied the method at first hand carried it out so imperfectly that they got no results. The mere use of carbolic acid was confounded with the demonstration of a principle, and it was pointed out that Lemaire had antedated Lister in the use of this agent. True, Lemaire and others had used carbolic acid empirically to lessen the foetid discharge from wounds, but Lister, by inductive reasoning, discerned the scientific basis for the antiseptic method and selected carbolic acid as the most avaliable means to destroy micro-organisms. His most hostile opponent was a colleague in the Edinburgh faculty, Sir James Y. Simpson, Professor of Obstetrics, a deservedly influential figure, who introduced the use of chloroform and made notable advances in his special field. Convinced of the harmfulness of all ligatures, he had introduced the principle of the control of haemorrhage by acupressure, meaning the introduction of long polished needles through the tissues to compress the vessel until occlusive thrombosis had occurred. Lister's work abolished the necessity for such a plan, and Simpson was petty enough to feel chagrin, which he vented in criticism and disparagement. In London, too, the reception of the new idea was unfavorable except among some enlightened men. As a whole the profession there was sophisticated and unprogressive and the atmosphere was not that of a university circle. We are told that in 1867, of sixty-four surgeons attached to the eleven great hospitals with medical schools, only seven had medical degrees and only three had been graduated in arts. Small wonder that they were not as a whole receptive to new ideas!

Wholly different was the reception of the new principle on the Continent. German surgeons usually had been trained in a university and were working under intellectually liberal conditions. Such men were more likely to understand and appreciate a scientifically and philosophically worked-out method and most of them embraced the antiseptic doctrine with enthusiasm. Volkmann, returning to Halle after the Franco-Prussian War, found the hospital so devastated with the septic scourges that he contemplated causing it to be burned to the ground. Scarcely an operation had been done for months, lest the most trivial one be followed by death. In desperation he tried the antiseptic method, which he had heard of but never seen, and as if by a miracle pyemia and erysipelas were practically banished. At Nussbaum's hospital in Munich nearly 80% of all wounds were infected with hospital gangrene, and the mortality was so high that the closing of the hospital was contemplated. After one week of the new treatment, applied by inexperienced men, not a single new case of hospital gangrene developed, and as skill increased the other septic diseases were subjugated. The enthusiasm of these men may be imagined. The great Thiersch was convinced; Billroth, in Vienna, was a somewhat tardy convert, although he had done pioneer work in the bacteriology of sepsis. Bergmann in Berlin became a ready disciple, and was one of the first to discern the importance of emphasizing the role of asepsis in the attempt to prevent wound infection. In France a smaller but no less important group supported the new idea.

A vacation trip to the Continent was undertaken in 1875, which developed into a triumphal tour of the great medical centres, especially those of Germany. The reception accorded to Lister was probably not equalled in the history of medicine. A year later came his visit to America, where he was President of the Section on Surgery of the International Congress, held at the Centennial Exposition in Philadelphia. The doctrine of antisepsis had made but little progress in America, but Lister was warmly welcomed and naturally his presence gave strong impetus to its wider adoption. But that sceptics were found among the brightest stars in the surgical firmament is shown by the fact that Professor Samuel D. Gross, the Dean of American Surgery, who presided over the Congress, issued in 1882 his monumental *System of Surgery,* which was the standard American authority, in which he gives his reasons for being "somewhat chary in accepting the germ theory of the decomposition of animal matter," and speaks of the "alleged remarkable success" which Professor Lister and others had had in the employment of carbolic acid. During this trip Lister visited Boston and attended Professor Henry J. Bigelow's class at the Harvard Medical School.

THE LONDON PERIOD

The migration of Lister to London in 1877, at the age of fifty, on the invitation of King's College to accept the chair of clinical surgery, is somewhat difficult to explain. He left the highest surgical post in the gift of the greatest medical school of Great Britain, a circle of congenial and brilliant colleagues and a host of sorrowing friends, patients and students, to serve a small school whose classes were one-sixth the size of those at Edinburgh, without University connections, in a great city where the general medical atmosphere was neither liberal nor scholarly, but vexed by jealousies and distrust. His teacher and idol, Syme, was dead, and while his own parents were no longer living, he had a warm family feeling for others of his race. He always spoke of himself as a Londoner and destined to return. It is quite possible that inasmuch as his doctrines had received less acceptance in London than anywhere else, he may have felt it to be his mission to humanity to take personal charge of the campaign there. It must be admitted that the greatest of cities has a powerful lure for the provincial, perhaps because she inspires pique on account of her attitude of disdainful patronage. It is scarcely possible that the flesh-pots attracted him as they had so many men. He was leaving as lucrative a practice as he could desire. Here it may be said that Lister enjoyed and sought private practice, although his habits of unpunctuality, his looseness about fees, and his unwillingness to leave the details of after-care to the practitioner were not habits which were likely to cultivate it. He would not have approved of the modern idea that a clinical teacher shall be a salaried man cloistered from contact with the world. He believe it necessary to have personal experience with the difficulties of private practice in order to teach students who are to engage in it.

For fifteen years Lister held the professorship at King's College. The atmosphere at first seemed inhospitable, the material scanty and the attendance at his classes small, because the students, under the peculiar London system, were cramming for examinations for the College of Surgeons, which, of course were not conducted by their own teachers, and they found that if they had imbibed Lister's special doctrines, their answers were likely to be not acceptable. But any disappointment which he may have felt was perhaps forgotten in the pursuit of bacterium lactis and how to isolate it in pure culture; in physiological studies on the circulation and the influence of the vaso-motor nerves; in addresses before learned societies and attendance on Congresses. To evidence the stirring times at hand in things medical, mention must be made of the International Congress of 1881, in London, addressed by Virchow, Raynaud, Pasteur,—who described the attenuation of viruses and vaccination against fowl cholera and splenic fever,—Billings, Huxley, Volkmann, Koch,—who described his new method of cultivation of bacteria on solid media to procure pure cultures. Among these giants Lister did not suffer in stature. He closed the debate on the means of obtaining primary union in operative wounds by one of the most important communications he ever made. After reviewing the antiseptic principle, he stated his conviction that the peritoneum—in fact all the tissues of the body including the blood—possessed active bactericidal qualities capable of destroying putrefactive organisms of moderate number and virulence, and that the use of too strong antiseptics might do more harm than good by devitalizing the tissues and lowering their normal power of resistance. He reported in support of this animal experiments—which he was forced to carry out in France on account of the vivisection restrictions in England,—which revealed the invasion of threatened tissues by numerous corpuscles which he believed exerted a defensive function. These we recognize now as Metchnikoff's phagocytes, so it is clear that Lister narrowly failed to be the discoverer of phagocytosis.

It is necessary to realize that Lister held these views in order to make clear his attitude in the controversy between the champions of asepsis and of antisepsis which now arose. Under the influence of Bergmann's followers there was a tendency to disparage antisepsis and extol asepsis as though the two were alien and mutually inconsistent principles. The surgical world became ranged in two schools and feeling ran high. It is evident enough to us that the two methods are not alien but complementary, and both necessary for the carrying out of one great system. The very word "asepsis" is Lister's own, and his statements before the Congress of 1881 sufficiently reveal his belief in it. It is apparent, moreover, that the champions of pure asepsis constantly practice antisepsis by the use of heat in the sterilization of instruments, gloves and textile stuffs, and in the use of chemical germicides to prepare the skin. The matter seems trivial enough to us now, but the controversy was sufficiently warm to cause Lister real chagrin.

So much of our attention is riveted on his greatest work that we are apt to forget Lister's contributions to operative surgery. The sense of security which he derived from the control of wound infections permitted him to introduce many new procedures. In 1883 he reported seven successful cases of wiring of fracture of the patella, though the first operation of this kind was done by his former assistant Cameron in 1877. Fracture of the olecranon was similarly treated. He was the first to do an extensive operation on cancer of the breast, based on anatomical and pathological principles and approximating the modern perfected procedure. He justified the operative treatment of non-union or mal-union of fractures. He re-introduced supra-pubic cystotomy, which had lost favor in comparison with cutting for stone through the perineum. He formulated useful modifications of old methods of amputation, especially at the hip joint, based on careful and deliberate technique which were now made possible by anaesthesia and antisepsis. He was fertile in inventing new instruments and apparatus, many of which are in daily use now and are called after him.

An institution which owes much to him is that which bears his name in London. Pasteur's final and perhaps his greatest contribution was the treatment of rabies by inoculation with an attenuated virus, and the necessity for sending to Paris for treatment persons bitten by rabid dogs in Great Britain aroused British public sentiment to the necessity of providing a laboratory for the study, prevention and cure of infective diseases. Accordingly in 1891, with rather meagre private and no material government support, and in spite of the violent opposition of the anti-vivisectionists, the British Institute of Preventive Medicine was incorporated, with Lister as the first Chairman. It was proposed to change its name to the Jenner Institute in 1897 when the centenary of Jenner's discovery of vaccination was celebrated, but there was legal collision with private firms who were trading under the same title, so finally in 1903 Lister's name was bestowed on it. He was head of its governing board until his death, and always took the keenest interest in its activities. The mutual admiration of Lister and Pasteur, which had subsisted since the first moment when each learned of the other's work, was in grateful contrast to the jealousies of other savants. Its final expression came on that historic occasion when at the celebration of Pasteur's seventieth birthday at the Sorbonne in December 1892, Lister, still in full vigor of health and achievement, presented the homage of the Royal Societies of London and Edinburgh and embraced the scientist whose researches had made possible his own great contribution to humanity. Pasteur made a noble reply, in which he expressed his invincible belief that "science and peace will triumph over ignorance and war, that men will unite not to destroy but to build up, and that the future will belong to those who have done most for suffering humanity."

It is usually a wise provision which secures the laying down of responsible burdens on the approach of the Psalmist's span of life, but when, in 1893, Lister reached the retiring age prescribed by King's College he seemed as full of life and energy as ever. But the sudden and totally unexpected death of his wife while they were on a holiday trip in the same year was a blow from which he never recovered. Honors were heaped upon him: a Baronetcy, the Presidency of the Royal Society, honorary degrees, the Freedom of Edinburgh, of London and of Glasgow; finally a Peerage,—means by which man seeks to render homage but which add not one whit to the fame of such a man as Lister. Plans were made for more research and study, but without the encouragement and sympathy of his wife his heart was not in them. Practice disappeared. A serious illness in 1903 left him an invalid. He lived on, interested in reading about the world of science, but not participating in it. The celebration in every scientific centre of his eightieth birthday called forth tributes which made him say: "What a change of opinion has taken place during the years when I have been doing nothing." Death came imperceptibly, painlessly on February 10, 1912, and final homage was paid to him by a public funeral in Westminster Abbey, where among the effigies of kings and warriors and statesmen a noble medallion commemorates him.

How many favoring circumstances attended and helped in developing his character and talents! Parents of intelligence, sympathy and high ideals; a home whose atmosphere taught that the pursuit of happiness lay in the normal wholesome observance of Christian teaching; freedom from the burden of poverty which degrades as often as it spurs ambition; a wife who afforded support for mind and heart and soul; an inspiring profession; and last but not least—abounding health and strength. The spark of genius if planted in such soil and growing in such environment will logically develop a benefactor of the race.

A GLYCEROL-CHOLESTEROL PRECIPITATION REACTION IN SYPHILIS

BY WILLIAM A. HINTON, M.D.*

SACHS GEORGE[1] AND MEINECKE[2] were chiefly responsible for the application of precipitation methods to the practical serum-diagnosis of syphilis. In the old world, modifications of the principles which they had used were applied by Dreyer and Ward[3], Dold[4], Bruck[5], and others. In America, Kahn[6] effectively presented the same principles in a series of papers descriptive of his technique. All these methods in common depend on the precipitation of a lipoidal complex, as yet undefined chemically, by the serum of patients infected with syphilis.

Our experience in using some of these and other precipitation tests caused us to study in detail not only the principles underlying their reactions but also factors which might influence their delicacy or accuracy. Therefore, each reagent was studied both alone and in relation to the other reagents, in order to devise, if possible, some way in which the specificity of the reaction could be increased and the effect of nonspecific influences decreased. In the course of this study it was found that Wasserman-positive serums would completely precipitate, or serologically speaking, agglutinate a suspension of cholesterol in a *glycerinated* hypertonic solution of sodium chloride containing the merest trace of beef muscle extract and would leave a *water-clear* fluid containing distinct masses of cholesterol, while Wassermann-negative serums would leave the suspension visibly unchanged (evenly turbid), or at most with such finely divided flakes that the fluid appears turbid. The addition of glycerol evidently contributes to

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the precipitating effect, resulting, in the case of Wassermann-positive serums in the formation of large aggregates of cholesterol with a consequent complete clearing of the fluid. It was further found that glycerol protected the cholesterol suspension against adventitious agents which otherwise would disturb unfavorably its equilibrium. This protection has specifically resulted in the preparation of a suspension containing all of the ingredients ready for use which, when properly made, will keep unimpaired at least six weeks. Furthermore, the addition of the glycerol has made it possible to employ with advantage a lesser amount of alcoholic muscle extract than used in previously described methods, and still utilize the maximum amount of cholesterol. So far as our experience goes with the Kahn, the Bruck, the Meinecke reactions, and the slide test described by Kline and Young[7], the reaction reported here is more sensitive, and has not given the false positives which sometimes occurred in our use of the Kahn test[8].

A description of the technique of the test follows, and a discussion of the results on the records of 506 consecutive routine cases is given.

For the execution of this test the following reagents are required, and it is essential that clean dry glassware be used in their preparation:

1. A 5 per cent solution of sodium chloride (C. P.) in distilled water.

2. A 50 per cent solution of glycerol made by mixing equal parts by volume of distilled water and redistilled neutral glycerol.

3. A 0.7 per cent solution of cholesterol (Merck) in absolute alcohol. One or two days in an incubator at 37° C. are required for complete solution of the cholesterol.

4. An ether insoluble, alcohol-soluble extract of beef muscle which we will refer to as the "activating extract," is prepared in a manner similar to that described by Neumann and Gager[9] and later by Kahn[6], but with the difference that beef muscle is used instead of beef heart, and that the muscle is subjected to a temperature of 56° C. in drying. The detailed method which we employ is as follows: Round beefsteak, freed from fat and connective tissue, is finely ground and dried at 56° C. in a large, flat dish. This requires from four to five days. Beef heart muscle, similarly treated, may be used instead, but steak is preferred because it results in a reaction which is somewhat more distinct. The dried bits of muscle tissue are finely pulverized with a meat grinder using the machine's finest disc. The powdered tissue is then extracted four or more times with ether (U. S. P.) in a glass stoppered bottle in the proportion of 1 gm. of the powder to 4 c.c. of ether for each extraction. The process of extraction is complete when the extract is no longer colored. Vigorous shaking by hand for ten minutes is required for each extraction. Finally, all the ether is poured off and the residue, which now consists of the ether-insoluble constituents, is dried on filter paper. It is then extracted in a glass stoppered bottle with 95 per cent alcohol for three days at room temperature in the proportion of 1 part by weight of the dried, ground residue to 5 volumes of 95 per cent alcohol. Our experience, covering the use of six different extracts, has shown that they should be added in the proportion of 1 c.c. of the extract to 9 c.c. of the 0.7 per cent alcoholic solution of cholesterol. The mixture should be well shaken to insure complete mixing. We prefer to call this mixture composed of the activating extract and the alcoholic solution of cholesterol the "stock indicator" since the more usual term "stock antigen" is scientifically inappropriate. Inasmuch as this stock indicator has thus far shown no tendency to deteriorate, 100 or even 1000 c.c. may be made at one time and stored at room temperature in glass stoppered bottles of from 50 to 100 c.c. capacity. This will avoid chance contamination with a moist pipette or other sources of moisture.

5. Glycerinated indicator is prepared as follows: One part of the stock indicator, composed of 0.7 per cent cholesterol and the ether-insoluble alcohol-soluble fraction of beefsteak muscle, is pipetted into a glass-stoppered graduated cylinder. To this, 2 parts of a 5 per cent solution of sodium chloride are added. The graduate is quickly stoppered and immediately the contents thoroughly shaken. This mixture is then allowed to stand for one-half hour. Next, 12 parts of the 5 per cent salt solution are added and the contents again thoroughly shaken, and finally 15 parts of the 50 per cent glycerol solution are added and the contents again shaken thoroughly. It is important to follow these directions precisely because slight variations in the proportions will result in worthless tests. A properly prepared glycerinated indicator should keep at least six weeks.

In addition to these reagents and the glassware necessary in their preparation, the following are required:

1. Test tube racks which will hold 3 or more tubes in a row are desirable to avoid confusion.

2. Small test tubes 10 mm. in diameter and 100 mm. long, commonly called serum tubes.

3. An inactivating bath kept at a temperature of 55° C.

4. An incubator or Wassermann bath kept at a temperature between 25° and 28° C. The matter of temperature is *most important,* because the reaction is much less sensitive at temperatures above 28° C. and is not only less sensitive at temperatures below 25° C. but frequently will give negative reactions in the larger amounts of serum if the temperature had not gone below 25° C.

Previous to testing, the serum should be heated to 55° C. for one-half hour. The reaction appears to work equally well with unheated (active) serums as shown by a comparison with over 200 of the same inactivated samples tested simultaneously which gave almost identical quantitative results. The reactions recorded, however, are for convenience in making comparisons with the Wassermann reaction, based on the use of inactivated serums only.

The test is conducted in the following way:

1. Pipette into the first tube 0.1 c.c. of serum, into the second, 0.2 c.c. and into the third, 0.3 c.c. with a 1 c.c. pipette graduated in one-tenths.
2. Add 0.5 c.c. of the glycerinated indicator to each tube with a 10 c.c. pipette.
3. Shake thoroughly the rack containing the tests by inclining it an angle of about 60 degrees to the body. By repeating this ten times one obtains a quick but thorough mixture of the serum with the glycerinated indicator. The presence of distinct foam in each tube is the only safe criterion of adequate mixing. This is a most important step in the procedure because the glycerinated suspension is heavier than serum and thorough mixing is necessary for accurate results.
4. Place the rack containing the tubes in the Wassermann bath or incubator which registers a temperature *continuously* between 25° and 28° C. for 12 to 18 hours (overnight). At the end of 6 hours the difference between the positive and negative reactions is marked, but the final decision should not be made in less than 12 hours and preferably only after 18 hours. In removing the racks from the water-bath great care should be taken not to disturb the contents by the slightest shaking. If such care has not been taken it may be necessary to incubate 10 or 12 hours longer to reëstablish the reaction. The same precaution must be observed after a second incubation.
5. The results are then read. Negative reactions manifest themselves by a turbidity uniformly distributed through the fluid, whereas positive reactions show a water-clear solution which may have a few large or many fine clumps of the cholesterol suspended throughout, or from two to four large clumps pendent from the surface of the fluid. The striking difference between the two reactions is the *clear* fluid containing the particles of various sizes in the case of the positives, and in the case of the negatives, the uniformly turbid appearance or only a slight agglutination which may occur solely in the tube containing 0.3 c.c. of serum. The difference between positive and negative reactions is so striking that one is never doubtful about it. Very slight changes in clarity are always disregarded. A little experience with the reaction will readily indicate the characteristic difference between positive and negative reactions, provided it is borne in mind that the indication of a positive reaction is always complete *clearing* of the fluid and that it is independent of the size or character of the flocculi. Neither the opalescence occasionally encountered in serum, nor hemolysis unless marked has any effect on the clearness of this test nor on its accuracy.

In recording the tests, a complete clearing in any tube is designated as a "+" reaction. A distinct clearing of the contents of a tube except for coarse particles uniformly distributed throughout is recorded as a moderate positive "$\overset{M}{+}$", and a distinct clearing with moderately fine particles, approximately 0.5 mm. throughout, is recorded as weak positive "$\overset{W}{+}$". The test as a whole is recorded by noting the strength of the reaction in each of the three tubes. For example, suppose the reaction is strong throughout it would be recorded as a "+++" reaction and the final result reported as positive; if it were negative in the first tube, weakly positive in the second and moderately or strongly positive in the third it would be recorded as "$-\overset{W}{+}\overset{M}{+}$", "$-\overset{W}{+}+$" or "$--\overset{M}{+}$" and again the final result be reported as positive. In other words any test which gives in any tube a moderate or stronger reaction is reported as positive but a serum which gives a weak reaction with 0.3 c.c. only is reported as negative. Various combinations to which one may apply this same principle of nomenclature are encountered in routine work. Three quantities of serum are used in each test because this limited titration will give a more accurate diagnosis of syphilis and in a large number of cases will also give some indication of the amount of the reacting substance in the serum. The clinical significance of the latter is now under investigation.

Tests should be made on control serums as follows:

A negative serum which has cleared slightly ("$\overset{W}{+}$") with 0.3 c.c. of serum and two positive cases, one showing a strong reaction throughout and another showing only a moderate reaction in the tube containing 0.3 c.c.

The following table based on a study of 506 cases examined by this and the Wasssermann reaction[10] indicates the comparative results.

The outstanding facts are:

First: Of 138 cases of clinical syphilis the glycerol-cholesterol reaction was positive in 113 instances, whereas the Wasssermann reaction was positive only in 61; secondly, that of 365 cases without clinical evidence of syphilis there was not a single positive glycerol-cholesterol reaction. This included 195 specimens from pregnant women. Furthermore, in the positive group there was one case of primary syphilis of 9 days' duration and another of 3 weeks' duration. The Wassermann reaction was also positive in both of these cases. In three of the cases where the Wassermann reaction was negative both in the blood and spinal fluid as well, the glycerol-cholesterol reaction was positive. An important point bearing on false positives by the Wassermann test is shown in the two cases where the Wassermann was positive and the glycerol-cholesterol reaction negative. In both these instances a very careful clinical examination failed to disclose any evidence of syphilis. Moreover, in both Groups III and IV the glycerol-cholesterol test showed itself to be a more delicate reaction and presumably a more reliable test than the Wassermann in giving indication of the inadequacy of treatment.

	Test	Result	Number of cases	Clinical diagnosis
I	Wassermann Reaction Glycerol-Cholesterol Reaction	Positive Positive	52	Syphilis, treated.
II	Wassermann Reaction Glycerol-Cholesterol Reaction	Positive Positive	9	Syphilis, treatment not stated.
III	Wassermann Reaction Glycerol-Cholesterol Reaction	Negative Positive	29	Syphilis, treated.
IV	Wassermann Reaction Glycerol-Cholesterol Reaction	Doubtful Positive	23	Syphilis, treated.
V	Wassermann Reaction Glycerol-Cholesterol Reaction	Negative Negative	25	Syphilis, treated.
VI	Wassermann Reaction Glycerol-Cholesterol Reaction	Doubtful Negative	1	Non-syphilitic.
VII	Wassermann Reaction Glycerol-Cholesterol Reaction	Negative Negative	365	Non-syphilitic.
VIII	Wassermann Reaction Glycerol-Cholesterol Reaction	Positive Negative	2	Non-syphilitic.
	Total		506	

Conclusion: A simple, easily read, sensitive serum test for syphilis has been described, apparently possessing greater clinical value and requiring less labor, apparatus and materials than the Bordet-Wasssermann reaction, as was shown by a comparative study of 506 consecutive routine cases.

The writer wishes to express here his gratitude to Miss Genevieve Stuart, Assistant Bacteriologist in this laboratory, for her valuable suggestions and for her excellent technique, which aided greatly in the execution of this research; also to Francis B. King, a First Year Student in the Harvard Medical School, who assisted in the earlier experimental work and in the survey of the literature.

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BISMUTH ERUPTIONS

Disorders of the Skin Following the Intra-Muscular Administration of Bismuth Compounds in the Treatment of Syphilis

BY JACOB L. GRUND, M.D.

UNTOWARD reactions occurring with or following the use of bismuth in the treatment of syphilis are comparatively uncommon. Local tumor and abscess formation, pain at the site of injection, stomatitis, nitritoid crises, Herxheimer reactions, cachexia, nutritional and gastro-intestinal disturbances, and kidney damage as evidenced by the presence of pathologic urinary changes have been among those described.

Cutaneous disturbances have, in this country, been only rarely encountered. Reports of the preceding sequelae have appeared more frequently in Europe, especially in France, which fact may be accounted for in part by the more intensive administration and more widespread and longer employment of bismuth in syphilis than has been the case in this country.

REPORT OF CASES

Case 1: F. P., male, aged 31 years, had received arsphenamine and mercury during the course of thirteen months because of the presence of a positive Wassermann test. He had manifested no untoward reactions with the administration of these drugs. Following an intramuscular injection of 0.1 gm. potassium bismuth tartrate, there appeared eight hours later a diffuse and extremely pruritic eruption, situated on the trunk, arms and legs, lasting approximately one day and then gradually disappearing. The lesions described by the patient conformed essentially with the description of a wheal. Following two subsequent intramuscular injections of 0.1 gm. potassium bismuth tartrate, reactions similar to that just described occurred. The urine was negative, and there was no history of any other drug having been taken.

Case 2: J. R., female, aged 7 years, had just finished a course of 12 intravenous treatments of neoarsphenamine. She then received an intramuscular injection of 0.1 gm. quinine iodo-bismuthate. On her next visit to the clinic, one week later, she presented on the left buttock, at the site of injection, a palm-sized, slightly raised and indurated dark red area which, on closer examination, disclosed a small number of interspersed papules. This was not painful but was pruritic. She received a second injection of 0.1 gm. quinine iodo-bismuthate in the right buttock. One week later the skin of the right buttock presented a condition exactly similar to that described as appearing on the left. The latter had almost disappeared but the induration was present to a slight degree. Care was taken with the second injection that the possible factor of some bismuth having been deposited in the subcutaneous tissues, was eliminated. A third injection of the same bismuth compound removed as far as possible from the aforementioned erythemato-papular lesions, was followed by an exactly similar course of events. Bismuth therapy was discontinued. Examination of the urine was negative. It was impossible to obtain a history of the patient having taken any drugs other than the above.

Case 3: R. C., female, aged 44 years, was referred to the syphilis clinic of The Boston Dispensary because of a positive Wassermann test. She stated that seven years previous to entrance she had suffered with marked varicose veins and an itching rash widely spread over both lower legs.

During the two ensuing years she received alternating courses of neoarsphenamine and mercury. Because of the inefficacy of these drugs in producing a satisfactory change in the Wassermann reaction, intramuscular injections of potassium bismuth tartrate were instituted. In a period of eight months, she received two successive courses of 2.49 gm. and 2.89 gm. potassium bismuth tartrate. A rest period of seven weeks without antisyphilitic treatment of any kind was interpolated between the two courses.

One month after the last bismuth injection, the patient returned to the clinic complaining of an itching rash over both legs. Questioning revealed the fact that the eruption had been present three weeks. On examination she presented over the anterior aspect of both lower legs, a diffuse erythema, superimposed by fine to course scaling and surrounded by ill-defined patchy pigmentation. The affection was considered a varicose eczema and bismuth therapy was resumed. Despite the use of various topical applications and the quartz mercury vapor lamp,, the eruption grew markedly worse. After receiving a total of 1.2 gm. potassium bismuth tartrate, there appeared, one day later, a diffuse, extremely pruritic, red and scaling erythemato-papular eruption on both cheeks, both forearms and upper torso. Bismuth as a possible causative factor in the production of the eruption was then considered. The probability of any other medication's playing a part was eliminated inasmuch as there was no history of such. The possibility of arsenical dermatitis was also eliminated because of the period of sixteen months which intervened between the last injection of neoarsphenamine and the first appearance of untoward skin changes. Examination of the urine was negative.

Treatment with bismuth was stopped and daily injections of sodium thiosulphate were given. After the administration of a total of 3.25 gm. in four days, the erythema on the face, arms and chest disappeared and papules grew much smaller and fainter. The older lesions of the legs showed a corresponding degree of improvement. She continued to receive bi-weekly injections of 1.0 gm. sodium thiosulphate until a total of sixteen injections was reached, when the patient disappeared from the clinic. On her last visit, she presented on both legs several areas of crusting the size of twenty-five cent pieces, surrounded by narrow zones of faint pigmentation. The papular lesions of the upper portion of the body had entirely disappeared.

Case 4: Mrs. M. H., aged 41 years, was referred to the syphilis clinic of The Boston Dispensary from The Lying-In Hospital with a history of having had three miscarriages and a positive Wassermann test. Physical examination was entirely negative. In August 1921, she presented, immediately after the completion of a course of twelve intravenous arsphenamine injections, an erythematous eruption which covered both arms along their entire extent.

She received no further anti-syphilitic treatment of any kind until November 1922. At this time, after having received an intravenous injection of 0.15 gm., an acute and markedly pruritic erythema with fine superimposed scaling appeared on the back of the neck, on the dorsal aspect of both hands and on the forehead.

Arsphenamine was again discontinued and she received only mercury in pill form up to November 1923, when she was given five injections of 0.1 gm. arsphenamine and again presented an eruption essentially similar to the one last described. During the period of June to December 1923, she was treated for epidermophytosis of the toes of both feet. Following the last-mentioned date no note of the obviously parasitic infection was again made.

From June 1925 to October 1925, she again received a course of ten treatments of 0.3 gm. neoarsphenamine, after the last injection of which, she again presented an erythematous eruption on both forearms. This subsided rapidly after the withdrawal of intravenous therapy.

In November 1925, bismuth therapy was instituted. At the end of February 1926, she had received a total of 2.6 gms. potassium bismuth tartrate. On April 5, she returned to the clinic complaining of an itching rash of both arms and marked itching of the toes of both feet. She stated that the eruption had been present ten days before her coming to the clinic. A diagnosis of dermatitis, cause unknown, and epidermophytosis was made. An injection of 0.1 gm. potassium bismuth tartrate was administered.

The patient was not seen again until April 13, when her physician, Dr. David S. Green of Boston, had the writer see the case. Although the patient had been seen occasionally at The Dispensary clinic, she presented at this date an appearance which was practically unrecognizable. The skin of the face was markedly oedematous. The eyes, which were tightly closed, exuded a purulent fluid from their corners. The gums were spongy and of a dark purplish hue. The mucous membranes of the inner surface of the cheeks presented a small number of gray membranous placques. The fauces were markedly congested. Examination of the heart and lungs was negative. A fine branny scaling, accompanied by marked itching, entirely covered the hairy portion of the scalp. Disseminated over the chest, back, abdomen and legs were many brownish-red follicular papules. A faint erythema with an overlying fine-to-course scaling occupied the upper extremities from a point just below the shoulders to the flexures of the elbows. The epidermis of the palms of both hands was elevated by a large amount of fluid, which when permitted to escape, assumed the form of frank pus. The skin of the dorsal aspect of the hands was markedly erythematous and scaling. The skin of the soles of the feet was an exact counterpart of that of the palms, being similarly raised by a large amount of pus. The skin of the interdigital spaces of both feet was macerated and covered in part by thick yellowish black crusts. A thick foul smelling dark fluid oozed from beneath the latter. The skin at the junction of the toes and the rest of the foot was deeply fissured, giving the foot at that point a distinctly gangrenous appearance. A superficial ulcer of the size of a twenty-five cent piece was present at the instep of the left foot.

The patient's temperature was 97.4. Examination of the urine was negative. There was no suppresion of urine, the intake and output of the latter falling within normal limits.

A tentative diagnosis of bismuth dermatitis was made, 0.5 gm. crystalline sodium thiosulphate dissolved in sterile distilled water was administered intravenously. Other general eliminative measures of value in combating a toxic affection of the above nature were prescribed. By means of multiple incisions, the pus was drained from both hands and feet. One day later, although the swelling of the face had subsided slightly, the skin lesions had shown no improvement. She received an intravenous injection of 0.75 gm. sodium thiosulphate. On April 15, two days later, the facial oedema had greatly decreased the papules had regressed, and the desquamation had diminished in extent. The patient called attention to a feeling of much better well-being. Generalized itching of a marked character was still present. The pus had entirely disappeared from both hands and feet and the skin of these areas was beginning to desquamate. An intravenous injection of 1.0 gm. sodium thiosulphate was given. She showed continued and marked improvement up to April 26, when she received an eleventh injection of sodium thiosulphate. At this date the face had assumed its normal size; the skin of the back and chest was normal; the follicular papules, formerly present on both legs, had been replaced by small pinhead sized pigmented spots; the old skin of the hands and feet had entirely desquamated; the moisture and maceration of the skin of the interdigital spaces had been replaced by a healthy and unbroken skin; the ulcer of the left foot had disappeared. Marked pruritis of the forearms, hands and soles of the feet was still present. As a result of continued traumatization, a large patch of violaceous lichenification was apparent to the junction of both upper and lower arms. The backs of both hands showed similar lichenified lesions. The injections of sodium thiosulphate were stopped. A total of six generalized radiations with the air cooled quartz mercury vapor lamp were given. No improvement was obtained. An additional cracking and fissuring of the skin of palms became manifest. Seven weekly treatments of the affected areas by means of fractional doses of the X-ray brought about a total disappearance of all signs and symptoms.

There has been no recurrence up to the present. It was impossible to obtain a history of the patient having taken drugs other than those previously mentioned.

LITERATURE

Gaston and Pontoizeau[1] describe a bismuth eruption in a case of primary syphilis. The patient received three injections of a colloidal bismuth preparation in a period of six days. Two days after the last injection, a slightly pruritic erythemato-squamous rash appeared on the flanks, thorax and abdomen.

Hudelo, Simon and Richon[2] report an erythemato-squamous eruption after the administration of bismuth hydroxide. The patient had previously presented an eczematoid dermatitis after treatment with neoarsphenamine.

Courcoux and Boutelier's case[3] presented, following injections of a bismuth preparation, an intensely pruritic urticaria which persisted for two months. Following this interim, it changed in character to an eruption marked by the presence of erythemato-squamous placques, pigmented follicular papules and pigmented patches of varying sizes.

In a series of cases treated with bismuth alone and with bismuth and mercury, Fouquet and Machton[4] state that in one case the eruption was urticarial and in six, erythemato-squamous. The skin lesions first appeared at the end of a series of injections and were usually preceded by itching. The authors add that it was impossible to state whether the mercurial or bismuth compound was the cause for the appearance of the dermatitis.

Nicolas, Gaté and LeBeuf[5] report an interesting eruption following the use of bismuth. After treatment with arsphenamine, a scarletiniform erythema had appeared. Following its disappearance, bismuth therapy was instituted. There then appeared an almost generalized eruption of acuminate follicular papules, red and slightly pruritic, with close resemblance to lichen scrofulosorum.

In a series of one hundred and twenty cases of syphilis receiving fifteen hundred injections of bismuth, J. A. Hopkins[6] noted two cases of dermatitis: one, a generalized erythema, the other, a scaling circinate eruption situated on both legs.

McCafferty and MacGregor[7], treating a number of subjects with Wassermann-fast syphilis and using a preparation of sodium and potassium bismuth tartrate, observed one cutaneous eruption which cleared rapidly after the withdrawal of bismuth therapy.

Levin[8] describes a case of affixed eruption evidently due to bismuth. After a sixth intramuscular injection, a persistently itching rash appeared. It was characterized by the presence of dime sized to quarter sized round, dark red and bluish red, slightly elevated macules. They faded slowly following the cessation of treatment but were intensified by subsequent injections.

Holzamer and Schultze-Heubach[9] describe a case of a persistent bismuth exanthem followed by neurodermization in a patient with hepatic insufficiency.

Müller[10] reports a case of dermatitis exfoliativa following treatment with bismuth. Pinard and Marassi[11] describe an exfoliative dermatitis similar to that rarely appearing as an untoward effect of mercury. The latter was apparent on the abdomen, thighs, and axillae of a patient with an aortic lesion and a probably lowered kidney function.

Galliot[12] reports three cases of erythema from bismuth. In two, urticarial outbreaks of several days duration occurred following injections of bismuth salts; the third, an infant, presented a scarletiniform eruption on the skin of the buttock into which the drug had been injected.

Sternberg[13], after administrating 11 c.c. Casbis, a bismuth preparation, noted an hemorrhagic eruption on the neck and extremities. The lesions disappeared spontaneously.

Lepinay's[14] case manifested a severe urticarial outbreak after a first injection of quinine iodo-bismuthate. Subsequent injections of the latter were followed by similar intense reactions.

COMMENT

Taking into consideration the fact that bismuth is at present widely employed in the treatment of syphilis, the paucity of reports of untoward cutaneous reactions with its use indicates that it is a relatively rare disorder. In the European literature only sporadic reports have appeared, and in this country merely cursory mention has been made of the subject. The fact that it can occur and occasionally assume a serious aspect if it is unrecognized and the administration of the causative agent persisted in, is apparent in at least one of the cases in this report. Every questionable eruption, with the factor of syphilis as the etiological agent eliminated, should be suspiciously regarded and watched carefully to ascertain definitely that the administered bismuth compound plays no part in its production.

In a study of the cases previously described, together with those embodied in the present report, it is plausible that the eruptions, which embrace a large part of the fundamental lesions of cutaneous pathology, may be placed in either one of two categories one in which the disorder is of a relatively mild and transient character, and the other in which it is much more severe and lasting. The latter does not as a rule, in contradistinction to some cases of generalized arsphenamine dermatitis, eventuate fatally.

The pathogenesis of a bismuth eruption can at best be approached only from a speculative standpoint. The protean characteristics, which in some instances coincide with those present as a result of the administration of a mercury compound might possibly be explained by theories postulated as a cause of the latter type of eruption. The first[15] of these suggests an individual idiosyncracy. To the latter Peters[16] has added the presence, in an affected subject, of a peculiarity of the surface epithelium. More recently, Almquist[17] elaborated the theory that in a subject with an inherent susceptibility, the drug circulating in the blood stream produces a sympathetic nerve paralysis with a consequent dilatation of the blood vessels and resultant edema, which, favoring bacterial growth and an accompanying leukocytosis, results in a pathologic variation of the normal skin texture.

The possibility of the causal relationship of an antecedent skin eruption to a bismuth dermatitis should be considered. The former may act as a sensitizing factor in the deleterious action of bismuth on the integument. In two of the cases of those previously reported and in two of the series in the present paper, a history of a previous cutaneous eruption is apparent.

In none of the writer's cases were the eliminative functions interfered with, indicating that the factor of accumulation because of this state could be disregarded. The tendency of a particular bismuth compound to cause an eruption can also be discarded because of the variety of bismuth compounds used in previous reports of bismuth eruptions.

TREATMENT

Immediate abstinence from bismuth therapy is essential. In the mild transient type, this alone will suffice for the disappearance of the eruption. In the more fixed and severe type, it is necessary to resort to other measures to effect a regression of signs and symptoms. Sodium thiosulphate solution intravenously has, in the writer's experience, brought about an immediate improvement in the appearance of the lesions. With its continued use, definite and marked regression of untoward signs and symptoms is accomplished. It may be necessary, however, to resort to treatment with the Roentgen ray to efface the last vestiges of the eruption. Treatment with the quartz mercury vapor lamp is without value.

SUMMARY

Although cases of bismuth dermatitis have been reported, it is a very rare disorder. Four cases seen by the writer are described. Three manifested skin lesions essentially similar to ones previously reported; the fourth presented primary skin changes totally dissimilar. Bismuth eruptions have been divided into two categories in accordance with their severity. Theories as to the probable mechanism in the production of a bismuth eruption have been presented. Its successful management by means of the continued use of intravenous sodium thiosulphate solutions is advocated. The value in one case of treatment with fractional doses of the X-ray in bringing about a final disappearance of the itching remains of the eruption, after continued treatment with a solution of sodium thiosulphate, is also shown.

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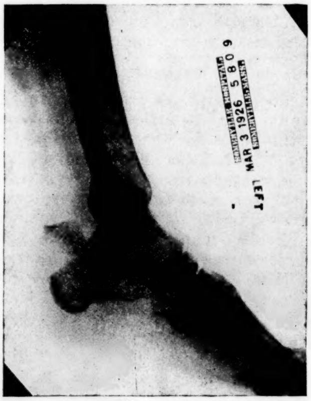
AVULSION FRACTURE OF THE OS CALCIS

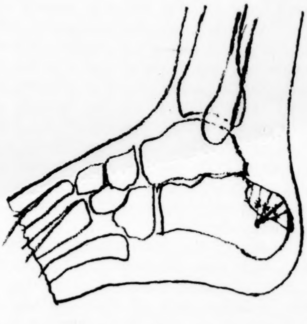
BY HAROLD G. LEE, M.D.

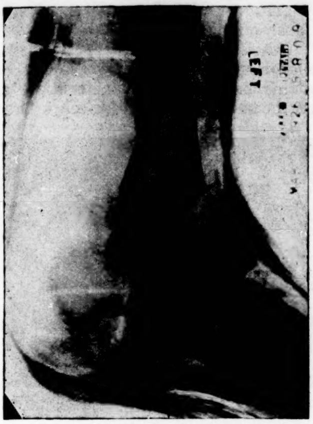
FRACTURE of the os calcis is a rather common injury. Avulsion fracture of the os calcis—the tearing away of the upper portion of the os calcis by the action of the gastrocnemius soleus muscles acting through the tendo Achilles—is a very rare lesion[1]. Little reference is found in literature to this type of fracture and its treatment; most of the cases alluded to occurred in boys under eighteen years of age and were more properly considered epiphyseal separations. The following incidence of this fracture is presented mainly for its rarity, and partly for its gratifying end result.



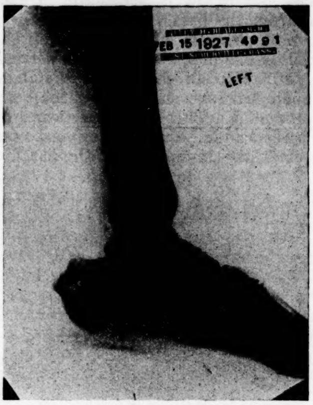
CASE. MRS. D. H. Seen March 3, 1926, in consultation with Dr. Eugene Maguire, Somerville. While leaning over a stove door, the patient, a heavy woman, lost her balance and fell. There was immediate pain in the left heel with inability to rise. Radiogram (Figure 1) at Somerville Hospital, showed an avulsion fracture of the os calcis. Open reduction was advised and performed.

Operation, March 5, 1926. Two lateral incisions exposed the broken fragment and the body of the os calcis. The blood clot was removed and the fracture cavity was exposed. Chromic gut sutures (No. 2), passed through a hole drilled in the body of the os calcis, were carried over the approximated fragment and tightly tied, holding the fracture in perfect apposition. (Figure 2.) The foot could be brought nearly to a right angle without causing undue tension on the sutures. The incisions were closed tightly. A plaster cast was applied extending from the toes to above the knee.





Radiograms (Figure 3) taken five days after operation, show perfect apposition. The patient's convalescence was uneventful. The plaster cast was worn for three months. During the latter part of this time weight-bearing was allowed.



Radiograms (Figure 4) taken six months later, show complete bony union. The patient walks up and down stairs without pain.

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BOSTON CITY HOSPITAL STAFF CLINICAL MEETING, SATURDAY, DECEMBER 18, 1926

OSTEOGENIC SARCOMA OF HUMERUS

Dr. I. J. Walker:—This young man entered the hospital in December, 1921, when he was 19 years old, with the story that two years previously he had noticed a tumor the size of a marble at the insertion of the deltoid muscle. This gradually increased in size until at the time of entrance it was about as large as a football. The question naturally came up as to whether or not it was an osteogenic tumor. Numerous consultations finally led to the decision against this diagnosis. It was decided to remove the tumor, and save the shaft of the bone, if possible. X-rays of his chest showed no metastases. We consequently cut down upon the excrescence, and endeavored to take it out. When we came to the junction of the upper and middle thirds of the shaft, we found a fracture of the bone. Of course it would have been unwise to leave the arm in that condition, so we did an amputation at the shoulder joint with the idea of removing a useless arm, but with no expectation of cure, if the growth was found to be osteogenic.

Of course, today there would be no question but that the X-ray diagnosis would be one of osteogenic sarcoma. The patient has done well, and has been apparently in good health up until now. This morning, on looking him over, we find that he has a small recurrence just below the outer end of the clavicle. He states that he has noticed this for about two months. The X-rays of his chest taken this morning are negative, so far as recurrence is concerned. The outlines of the scapula and clavicle are good, showing no involvement. Of course, the recurrence is also osteogenic.

The remarkable thing about this case, the reason for showing it, is the duration of life of this individual, who has had an osteogenic sarcoma for at least seven years. Of course, the reason for his living so long is well explained by the nature of the tumor as seen under the microscope. We are going to remove the recurrence.

Dr. P. F. Butler:—This is an interesting case from an X-ray point of view (Figure I). We are presented with a film of a large tumor mass of the upper arm, which shows destruction of the bone and new bone production in soft tissues. The problem is—(1) is it benign or malignant?—(2) what is the nature of the tumor? The only similar benign conditions are myositis ossificans, old osteomyelitis, and possibly Charcot joint. Old osteomyelitis lays down new bone parallel to the shaft and has a definite history. Myositis ossificans lays down new bone parallel to the shaft in irregular placques, but has no appreciable swelling of soft tissues. Charcot joint arises from joints and shows great destruction of bone but no new bone production. In the malignant conditions we must consider carcinoma and sarcoma. Carcinoma is epithelial in origin and is always metastatic in bone—in women from the breast, and in men from the prostate. Carcinoma is never a bone producing tumor; this eliminates this diagnosis from consideration. We can eliminate the spindle cell and round cell sarcomas because these are not bone producing. This brings us down to osteogenic sarcoma, and this is a typical case. It shows extensive destruction of the shaft of the bone with new bone formation extending into soft tissues at right angles to the bone. An interesting fact in the prognosis of these cases is that, in the osteogenic sarcomas, where a great deal of new bone is laid down, the prognosis is better than in the cases where a small amount of new bone is laid down. The proper treatment is amputation and then X-ray treatment.

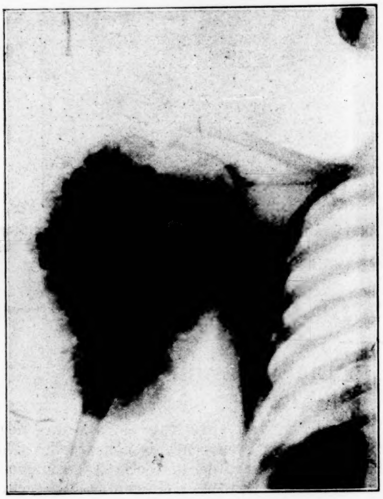

FIGURE I.

Dr. F. B. Mallory: Dr. Walker has asked me to speak on the pathology of this case. The tumor measured 24x21x13 cm., being larger than a man's head, and on gross examination appeared nodular and very hard. It was situated around the upper end of the humerus. The head of the bone and the lower end were intact, but in the tumor itself the shaft was completely destroyed. Clinically, there was nothing for the surgeon to do but to amputate.

Microscopically, the tumor consists of cartilage in various stages of development. In places it is growing rapidly with perichondrium around it, but in other places it is undergoing degeneration and calcification.

I will demonstrate the microscopic appearance of the tumor by means of two lantern slides. In the first (Figure II) are cartilage cells with a great deal of intracellular substance between them. This is of importance, for it shows why the cells of this type of tumor do not readily get free from each other to form metastases through the blood and lymph vessels. There was a famous case reported many years ago from the Johns Hopkins Hospital in which a chondroma started in the pelvis and grew into the vena cava and on through it into the heart. The extension of the tumor was very great but no metastases occurred.

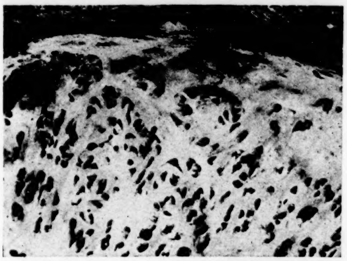

FIGURE II.

In the second slide (Figure III) the dark parts are where calcification has taken place, as a result of which the tumor felt hard like bone.

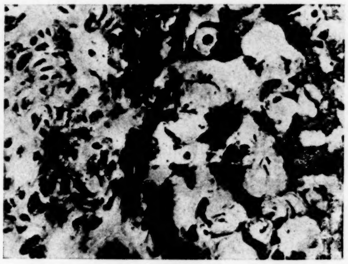

FIGURE III.

I want to say a word on differential diagnosis. Three conditions have to be considered in deciding the wisest course to follow clinically. One is exostosis cartilaginea. This is an abnormality, not a true tumor, and is due to growth of cartilage cells displaced at the time of the development of the bone. The displaced cells continue to grow indefinitely and are constantly replaced by bone formation. Removal of all the cartilage cells stops the growth of the bone.

A second condition to be considered is the so-called benign giant cell tumor or sarcoma, which also is not a true tumor. It is simply a tumor-like mass formed as the result of a repair of a lesion within a bone. What the original lesion is, whether necrosis or hemorrhage or something else, we do not know, but, in repair of the lesion, fat and lime salts attract many endothelial leucocytes into the marrow of the bone to dissolve fatty acid crystals and the lime salts. The leucocytes fuse to form foreign body giant cells. As a result of the pressure within the rigid bone due to immigrated cells and the dilatation of the blood vessels under inflammatory conditions, erosion of the shaft takes place adding more lime to be dissolved and attracting more endothelial leucocytes. At the same time that the bone is being dissolved on the inside, new bone is being formed on the outside in order to strengthen the dilated shaft. In time a large tumor mass is formed with a thin shell of bone at the periphery and a mass of granulation and connective tissue, dilated vessels and endothelial leucocytes and foreign body giant cells within. Relief from pressure by spontaneous fracture or surgical operation, or even X-ray therapy, permits normal repair to take place.

The other condition to be considered is osteogenic sarcoma. It arises from fibroblasts which can differentiate into cartilage or bone, or both, and give rise to tumors growing at various rates of speed and showing various degrees of malignancy. The tumor in this case which Dr. Walker has presented represents one type of this osteogenic group, and, clinically, is the more favorable to operate on because of the less likelihood of metastases occurring.

URETERAL STONE WITH PERFORATION

Dr. J. J. Hepburn:—This case is a shining example of what nature will do. The man is a chauffeur, aged 28, and the only significant thing in his past history is that three years ago, after having had pain in his right side, he was sent to the City Hospital for X-ray examination. The plates taken at that time were negative. On September 18th, ten days before admission, he was seized with violent pain in the right lower quadrant, accompanied by some nausea, but no vomiting. On admission, he had a temperature of 100°F. and a white count of 18,000. A mass could be felt in his right lower quadrant. Diagnosis, on admission, was "appendiceal abscess." We felt, however, that this diagnosis was questionable. In the first place, the mass was on the outer side toward the ileum, and secondly, the patient did not have a history suggestive of an abdominal lesion. With that in view, we attempted to make the operation extraperitoneal. On incising outside of the mass, we came down to an abscess filled with very foul smelling colon pus. After exploring the cavity, a small stone about the size and shape of a date stone was found. It became evident that we were dealing with an abscess about the ureter where a mass had sloughed through. The gangrenous ureter was identified. The distal end was found to be destroyed; the proximal end was edematous and pus was obtained by stroking along its course. Our first impulse was to do an immediate nephrectomy, on the assumption that there was a pyelonephrosis with destruction of the kidney. After deliberation, we decided to be more conservative. We resected the gangrenous end, and did an end-to-end anastomosis over a No. 8 French catheter. The sinus drained for eight or ten days. Boric acid irrigations were given, and finally the discharge ceased, and the patient went on to a normal convalescence.

Two weeks after operation Dr. Kimpton did a cystoscopy. The bladder was edematous, and there was a great deal of cystitis and swelling around the ureteral orifice. It was impossible to get into the ureter. Ten days later another attempt was made, and again there was obstruction inside of the right ureteral orifice. The patient was sent home to recuperate, and given instructions to clear out his bladder. During his stay in the hospital he was given boric acid irrigations.

Six weeks after discharge he reported for X-ray, and the plate showed that the catheter had entirely disappeared. We were sceptical about this, and had stereoscopic plates taken to make sure the catheter was gone. As far as we could tell, the boy was perfectly normal. He had no symptoms, no discharge, and no discomfort. His urine was negative. To check up, we thought it advisable to have a urological consultation and Dr. Binney was asked to examine him.

Dr. Horace Binney:—It was incumbent upon me to locate the catheter. I had some hesitation after two experts had undertaken it. However, the patient was easily cystoscoped; his bladder was normal, and a No. 5 French catheter passed up to his kidney without any difficulty. The urine flowed with a normal efflux before we put the catheter in. At the beginning of the examination we injected indigocarmine intramuscularly, expecting that we would need it to find the ureteral orifice. The blue color appeared through the catheter in the usual time, showing that the kidney function was normal. We then put in some sodium iodide and sent him to the X-ray Department. The plates showed the catheter pretty well up into the ureter, and the sodium iodide filled the kidney pelvis, which was of normal size and shape. Only 5 c.c. of sodium iodide, I believe, were injected, so there was no pyonephrosis or dilatation of the pelvis, in spite of the fact that a stone had been blocking the ureter for a good while. After withdrawal of the catheter into the bladder, the sodium iodide passed down and showed a normal ureter shadow.

There have been two explanations offered as to how the patient got rid of the catheter—that he passed it without knowing it soon after the operation, or that he passed it by rectum after it had sloughed through. In either case he should have known it.

Dr. J. J. Hepburn:—The only possible conclusions that may be arrived at, as a result of Dr. Binney's and other examinations, are that the patient, in some way unknown to himself, passed the catheter, that the continuity of the ureter has been re-established, and that the kidney has resumed its normal function. Whether the catheter was passed by the urethra or whether it sloughed into the bowel and was passed by rectum, I do not know. At any rate, it was passed after the operative wound was completely healed.

This young man will have to be kept under observation for year so that stricture of the ureter may be detected and treated by dilatation in order to avoid a future hydronephrosis.

PAGET'S DISEASE AND SYPHILIS

Dr. Bernard Appel:—This patient was admitted to the Skin Service complaining of an ulcer on the lower third of his left leg of several years' duration. He is a white man, about 60 years of age, married, with no active occupation for several years past Examination showed a typical, late, syphilitic ulcer, the edges of which were sharply demarcated and surrounded by whitish, macerated skin with slight induration. There was a moderate discoloration of the entire lower leg.

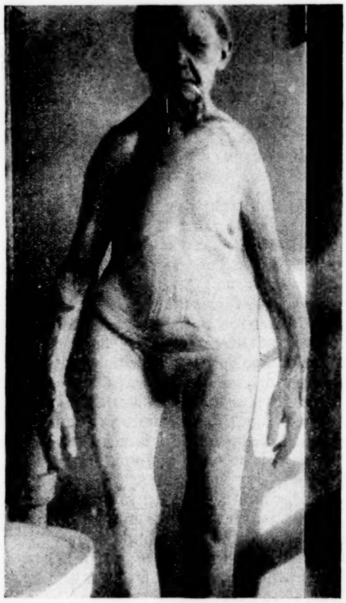

FIGURE I. Paget's disease and syphilis. (Photo by Skin Department.)

General examination showed a striking, classical appearance of Paget's disease of the bones. The stature was dwarfed, the head large, and the left fore-arm, particularly, markedly bowed outward; moderate scoliosis and forward and outward bowing of the lower extremities had a further tendency to shorten the stature.

Treatment for his syphilis has been instituted, of course, regardless of his bone condition, and the ulcer is gradually healing. It will be interesting to watch him for any change in the appearance of the bones, and we intend to follow him up for as long a time as possible to take measurements of his skull and of the angles of his bones.

One point in the differentiation of the bowing of syphilis from that of Paget's disease ought to be mentioned. In an X-ray study of the long bones, the bowing of syphilis will be found to be due primarily to a piling up of bony tissue by a subperiosteal deposit of bone substance. The bowing of Paget's disease, on the other hand, is due to a weakening of the cortex plus an actual bending of the entire bone, which results in a shortening. In addition, there is the diffuse thickening of the bone throughout, interspersed with areas of rarefaction. An interesting fact about this disease is that it may undergo malignant degeneration.

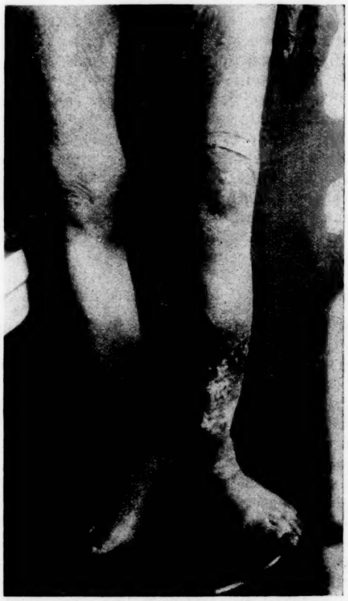

FIGURE II. Paget's disease and syphilis. (Photo by Skin Department.)

The patient is extremely short of stature (Fig. I), and there is a distinct "flaring out" of the pelvis. There is marked lateral bowing of the forearm, particularly on the left. Notice the forward bowing of the tibiae (Fig. II). At first we thought they were the tibiae of tertiary syphilis, but further examination showed the characteristic picture of Paget's disease. On the lower half of the left leg you see the typical tertiary ulcerations of syphilis—ulcers with sharply outlined edges and raw granular bases with practically normal looking skin intervening. Arsphenamine is being given intravenously, and the usual local treatment for the ulcer.

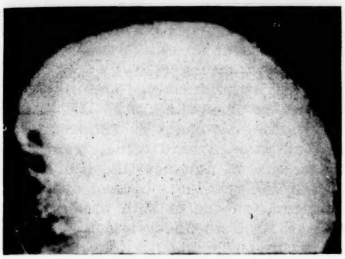

FIGURE III. Paget's disease and syphilis.

Notice, in the X-ray plate (Fig. III), the thickening of the intertabular space of the skull, the areas of rarefaction scattered throughout, as well as the areas of increased density, and, also, the general enlargement of the skull. One of the symptoms of this disease is that the patient has to buy a larger sized hat year after year. The plate of the forearm (Fig. IV) shows marked thickening of the substance of the bone, as well as bowing.

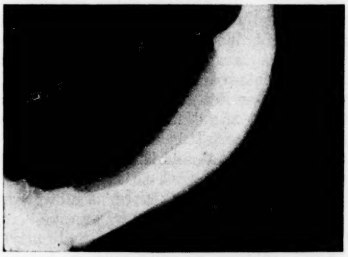

FIGURE IV. Paget's disease and syphilis.

There is no treatment for Paget's disease. Underlying diseases, for instance, syphilis, as in this case, should, of course, be treated. As these cases go along further in life, there is a tendency to malignant degeneration with the formation of an osteosarcoma. Plates of the femurs show areas of rarefaction and long fine trabeculation in the great trochanters, possibly evidence of the beginning of such a process.

The surprisingly small amount of literature on the subject gives no inkling as to etiology. The best guess is probably some kind of metabolic disturbance affecting calcium distribution.

Other cases were discussed as follows:

Plastic of Lower Jaw—Case presented and discussed by Dr. J. J. Hepburn.

Chronic Lymphatic Leukemia—Benign Anemia of Pregnancy and Rheumatic Heart Disease—Cases presented and discussed by Dr. J. A. Foley.

Empyema—Case presented and discussed by Dr. H. Binney.

Deformities in the Adult Due to Rickets—Cases presented and discussed by Dr. H. W. Dana.

ANTI-VACCINATIONISTS AND SMALLPOX

Despite years of educational work and the practical results of vaccination for smallpox there are still people who risk the dangers and disfigurements of the disease for themselves, and particularly for their children. It comes as a shock to learn from the report of the American Association for Medical Progress for 1926 that the United States reported more cases of this loathsome disease than any other country in the world outside of Asia.

Medical science is assured that smallpox can be prevented. Vaccines are manufactured with the most scrupulous care, and the risk of serious illness resulting from vaccination is negligible compared to the hazards of exposure to the disease. Physicians find it difficult to understand why parents not only neglect this important protection for their children but in some cases refuse to permit vaccination by a school or city doctor who will do the work in the most efficient way and gratuitously.

This country is joined in its ignominious position by England and Wales taken as a unit. The number of cases reported there last year was almost twice what it had been in 1925. Persons who still oppose vaccination should note that in sections where sentiment against it is strongest the disease is causing the greatest ravages.—*New York Times.*

TYPHOID FEVER IN ATLANTA, GEORGIA

Statistics are great things. They enable comparisons that otherwise would be impossible. It is regrettable to us as doctors when typhoid vaccine is available and its value unquestioned that the death rate for Atlanta from typhoid fever for the year 1926 was 17.2 per hundred thousand population. When investors are looking toward our fair Southland should we wonder that they hesitate to erect factories here? The coldblooded disdain with which capitalists look on us should be sufficient to cause us talk vaccination against typhoid fever and give the vaccine until every one has been immunized against this disease.

This reason becomes insignificant when we glance at one of the daily papers and see where some young woman 29 years of age who has just returned from her vacation is stricken with typhoid fever. A few days later we read of her untimely death. The time to treat typhoid fever is before it develops.

Have you and your family been vaccinated against typhoid fever recently?—*Bulletin of Fulton County Medical Society, Atlanta, Ga.*

Case Records
# of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

Edited by R. C. Cabot, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 13241

A CASE OF VENTRAL HERNIA WITH SPLENOMEGALY

Medical and Surgical Departments

A married Italian woman thirty-seven years old came to the Emergency Ward December 27 complaining of pain in the abdomen. She spoke no English. No family history or past history was obtained.

A week before admission she noticed a firm lump below an old operative scar in the abdomen. December 24 she began to have periodic cramp-like pains in the lower abdomen. She vomited twice during the night and twice the morning of admission. Her bowels moved the morning of admission.

Clinical examination showed an overnourished woman in no apparent discomfort. The entire examination was negative except for the abdomen, which was padded with excessive fat. In the midline above the pubis was an old operative scar. Beneath this and somewhat to the left was a firm, slightly tender mass, somewhat irregular in outline, the feeling of which was consistent with that of intestine with omentum under the skin. The mass was movable, but could not be forced back into the abdominal cavity. In the left upper quadrant was a firm smooth mass the size of a hand, descending on inspiration, probably the spleen.

Before operation urine and leucocyte count normal, temperature 100°, pulse and respirations normal.

The day of admission an incarcerated ventral hernia was repaired under ether. In the report of the operation there is no mention of evidence of ascites. The abdomen was not apparently explored. The patient made a good recovery from anesthesia. The afternoon of January 1 she had a chill with a temperature of 104°, pulse 148 and respirations 38. The temperature was down the following morning, but continued to show septic afternoon rise, reaching 105.3° January 3, pulse 160. The urinary sediment was loaded with pus. The leucocyte count was 22,700 January 1, 12,700 January 3. That day jaundice was noted. January 5 the icterus index was 40. There was marked right costovertebral tenderness. No chest pathology could be made out. A genito-urinary consultant thought that a kidney infection was probably present. January 7 the urine showed bile. X-ray January 9 showed the right diaphragm high but with no limitation of excursion. The lung fields were essentially clear.

The urinary sediment continued to be loaded with pus. Acid sodium phosphate and urotropin were given. The clinical picture did not change essentially at all. A blood culture taken January 8 was sterile. January 11 a stool examination showed bile; guaiac negative. The icterus index continued at 40 until January 17, when it was 30.

Cystoscopy was attempted January 15. A cloudy bladder urine was drained off. After repeated washings, when the bladder wall was fairly clean, the ureteral orifices could not be located because of numerous flakes of mucopus. The assumption was that purulent urine was being ejected from one or both ureters.

January 20 a second cystoscopy showed extreme cystitis. The bladder bled easily and showed numerous scars. The appearance time of phthalein on the right was 12 minutes, function in 15 minutes 5 per cent.; appearance time on the left 7 minutes, function in 15 minutes 15 per cent. (Dilution to 250 cubic centimeters.) The sediment of both urines showed many pus cells, the right 8 or 10 red blood cells per high power field, the left 3 or 4 red cells. By this time the renal condition had practically subsided. X-ray plates were entirely blank.

January 24 a third cystoscopy was done. The appearance time on the right was 7 minutes, function 10 per cent. (Dilution to 1,000 cubic centimeters.) Appearance time on the left 6 minutes, function 12 per cent.; many pus cells and rare red blood cells in both sediments. X-ray plates were again blank. This fact prompted another clinical examination, which showed much ascites. A medical consultant reported January 25: "Evidently she had a large spleen at entrance. It is still palpable and quite large, extending to the midline. . . The liver edge cannot be made out with so much fluid in the abdomen." January 25 the icterus index was 15.

January 25 the abdomen was tapped and 8 quarts of straw colored, opalescent, slightly turbid fluid obtained, specific gravity 1.008, cell count 474 per cubic millimeter, 2 per cent. polymorphonuclears, 11 per cent. large mononuclears, 51 per cent. lymphocytes, 36 per cent. red cells. The following day the mass felt in the left upper quadrant believed to be spleen seemed to have shifted its position rather than to have increased in size. It now extended somewhat to the right of the midline. This it did not do when felt in the Emergency Ward. It did not however extend any farther downward toward the umbilicus. It was still firm and smooth.

February 1 Dr. Bock reported: "No clinical jaundice to-day. Temperature normal, pulse

100, respirations 18. A large amount of ascites through which the left lobe of the liver and the spleen can be ballotted. Hemoglobin 75 per cent., reds 3,900,000, leucocytes 4,500, polynuclears 75 per cent., lymphocytes 15 per cent., eosinophils 3 per cent., mast cells 1 per cent., large mononuclears 6 per cent., red cells normal. Platelets large in size, normal in number."

February 4 another abdominal tap was done and 13 pints of fluid withdrawn. A culture from the fluid showed no growth. February 6 the icterus index was 7. February 12 another tap gave 12.5 pints of fluid, and February 18 a fourth gave 11.5 pints.

February 25 operation was done. The patient was in fairly good condition after it. The only complication was a possible pulmonary one. March 1 guinea pig tests of the ascitic fluid and the urine were negative. A blood Wassermann was negative. After March 2 the temperature for five days ranged from 98.6° to 101.3°, the pulse from 89 to 116. March 7 there were signs of consolidation and possible fluid at the left base. The chart was again elevated. The abdomen was stiff but showed no fluid accumulation. March 13 the patient vomited.

March 30 a Rosenthal bromsulphalein test showed poor liver function. (Dose 3.1 cubic centimeters; after 5 minutes 60 per cent., after 30 minutes 20 per cent.) The icterus index was 9. The wound was healed perfectly. There was no evidence of ascitic fluid. The patient was still running an afternoon temperature of 101° to 102°. A medical consultant found still a little dullness at the extreme left base. The signs were consistent with thickened pleura. There were no signs of consolidation or fluid. He doubted if the chest pathology caused the fever. March 31 the patient was discharged.

Records of the Out-Patient Department show that at a visit April 11 both wounds were clean and solid, with no evidence of hernia. The patient was feeling well except for occasional pain all over the abdomen. Sounds could be heard which seemed to be due to peristalsis. Her bowels were regular three times a day.

Discussion

BY A. V. BOCK, M.D.

We are starting with a handicap in this case because this was an Italian woman who spoke no English and that is always a source of difficulty to me. I believe that we make about seventy-five per cent. of our diagnoses on the history alone, and that not having a detailed, accurate history is the commonest cause of mistakes in diagnosis.

This woman came in apparently because of difficulty with a large ventral hernia. On her examination it was noted, and only noted, that she had a palpable spleen. In this hospital, and I suppose in many others, when we have a person from the Mediterranean region who has a palpable spleen we say it is a "Mediterranean spleen" and let it go at that. If a spleen is only just palpable or down one or two centimeters below the costal margin it may be all right to speak of it as "a Mediterranean spleen," but when a spleen is felt a hand's breadth below the costal margin it cannot be dismissed with the presumption that it is a result of repeated attacks of malaria in days gone by. That important finding was completely dismissed in this case at the time of the first operation, but the reason for that is apparent because the patient had a surgical condition that required interference as soon as it could be done. The surgeons went ahead with the operation, repaired the ventral hernia, and the interesting developments in the case began following the operation.

She apparently went through the operation quite well, and not until ten days or so after operation did she develop a noticeable reaction. She had fever, became quite sick, and very soon developed jaundice which was quite well marked and persisted for about two weeks.

The unexplainable thing in the story here I believe is the development of pyelitis, which we see every now and then complicating all sorts of conditions for which patients have been admitted to the hospital. A great deal of attention was paid by the surgeons to the question of a possible kidney infection other than a straight pyelitis, and that is the reason for the cystoscopy.

The fact that the X-ray plates taken after the cystoscopic examination were all blank led to the discovery that this patient in addition to having jaundice had also developed a great deal of ascites.

The question of diagnosis was a difficult one to settle because she had been through the operative procedure, and the question of a complication following the operation causing jaundice and ascites came up at once, and the usual diagnosis in a case like this was considered, mesenteric thrombosis.

I saw this patient after the most severe part of her reaction had subsided and at a time when her jaundice had disappeared but while she still had an abdomen full of fluid. She was very uncomfortable and unhappy, conditions were going very much against her, and the question of future procedure had to be settled. I felt that the patient did not have a portal thrombosis, but considered the question of Banti's disease and cirrhosis of the liver as two possibilities.

She had blood findings of leukopenia and secondary anemia which are characteristic of the picture we associate with Banti's disease, but it is not a diagnostic point in differential diagnosis because it is present in about a third of the cases of cirrhosis of the liver. I felt that Banti's disease in this case was not likely because the spleen was of only moderate size. I thought that if she had Banti's disease to the extent of producing enough cirrhosis to give her ascites she would have had a long preceding history, a history probably of hematemesis, which a great many have, or of tarry stools or of nosebleeds, and at this stage she probably would have had some diarrhea. Of course some of these she might have had and they may have escaped us in our inability to get a history.

In favor of cirrhosis of the liver is the fact that we are seeing not infrequently patients with advanced cirrhosis of the liver who have had a remarkably silent history, have been in comparatively good health until suddenly they have hematemesis or a hemorrhage that passes down the bowel and is marked by the presence of tarry stools. The fact that she developed jaundice is very much in favor of cirrhosis of the liver. In twenty-six cases of Banti's disease that we have done splenectomies on since January 1 1916, only one case had a history of jaundice at any time, and that was a case which I think was cirrhosis of the liver rather than Banti's disease. So that it seems to me that this patient had an advanced silent cirrhosis of the liver associated with a moderately enlarged spleen, and that what had happened at the time of, or as a result of the operation was that her fairly delicate balance between good health and ill health had been upset and the fact of her cirrhosis became quite suddenly manifest in the development of jaundice and ascites. Ascites is rare in Banti's disease except in the terminal phase. It is present in about one-third of the cases having portal cirrhosis as we have seen it here.

So that in view of the facts that she had had no jaundice until the operation, then following operation did develop jaundice and that jaundice persisted only ten days or two weeks, that she still had a good deal of liver function and liver reserve left as indicated by disappearance of jaundice, we thought that if we removed her spleen we could take a heavy load off the portal system and might give a badly damaged liver some chance at repair. Finally Dr. Vincent undertook the operation, although the patient was obviously not a very good surgical risk.

Dr. William L. McClure: I was not present at that operation, but I have some knowledge of the case. I had done the first operation myself, and Dr. Vincent told me his operative findings at the second. I will only add that this woman being seen in the Emergency Ward and having the language difficulty in obtaining a history, was examined and sent directly to the theatre for operation for the hernia, which was about the size of a large orange. It had a very small neck and there were no abdominal viscera contained in the sac, but a quantity of fluid in excess of that commonly seen; and my interpretation was that under anesthesia the neck had relaxed and allowed the visceral contents to drop back into the abdomen. What the record does not state, and should state, is that the fluid, in my opinion, was definitely increased beyond what is commonly seen in such a sac, and I think at the time of the original operation she had the beginning of ascites. I have debated whether she had sufficient ascites to contribute to the formation of the hernia. I rather doubt this, because the fluid was not extensive enough for that.

PRE-OPERATIVE DIAGNOSIS

Cirrhosis of the liver or thrombophlebitis of the portal system.

OPERATION

Gas and ether. The abdomen was opened by a high left paramedian incision through the inner third of the rectus muscle extending from above the ensiform cartilage to the umbilicus. The peritoneal cavity contained a large amount of ascitic fluid which was thoroughly removed before proceeding with the operation. The liver was irregular and very much shrunken, not exceeding the size of two fists. It occupied the right hypochrondrium. It was hard, nodular and adherent to the diaphragm. The left upper abdomen was filled with the spleen, which extended to a point halfway between the costal margin and the umbilicus. It was soft and dark red but not pathologically adherent. There was no perisplenitis. The spleen was removed with some loss of blood on account of the friability of the organ and the unusual shortness of the pedicle. Bleeding in the bed of the spleen was checked by running a catgut suture. The operation was completed by performing a Talma-Morison operation in suturing the omentum to the peritoneum of the anterior abdominal wall. The wound was closed without drainage.

PATHOLOGICAL REPORT

The spleen is enlarged, weighing 1030 grams and measuring 16 x 13 x 22.5 centimeters. It has normal surface markings. The capsule is thick. On section it has a brownish red firm surface without visible follicles.

Microscopic examination shows an increase in the connective tissue of the reticulum and the lymphoid cells in the sinuses of the pulp. The follicles are small. There is no evidence of hematopoiesis.

Hyperplasia.

Further Discussion

Dr. McClure: On examination of the liver it was found to be a very small organ, equal in size to two fists, hard, firm, nodular, such as we are told is typical of a cirrhotic liver in the advanced stage. She made a very good convalescence except for some chest pathology, which continued for a number of weeks,—signs of consolidation and an elevated temperature. Whereas before the splenectomy and the fixation of the omentum she had required to be tapped every four or five days for any degree of comfort, following the operation she required no tap during the period of her stay, which was some weeks. She did have a demonstrable amount of fluid in the abdomen, but it never got to the point of requiring removal. She was running a low-grade temperature, in spite of which we sent her home.

Dr. Bock: Fever is in our hospital a very common affair in cirrhosis of the liver, not very common in Banti's disease.

The Rosenthal liver function test, which sometimes tells us something and sometimes not, does here indicate a marked holding up of the dye and confirms the findings at operation.

In my clinical examination of this patient I was mistaken in the belief that the liver was palpable. Under the conditions present in this case such an error is too commonly made. If the liver had been shown to be much enlarged by clinical or X-ray evidence, splenectomy would not offer much help except in the group of cases presenting a definite picture of hypertrophic cirrhosis. The spleen at the time of operation proved to be larger than was thought and was actually about the average size of spleen associated with such advanced cirrhosis.

What her subsequent history is going to be I do not think anyone can say, but I believe that splenectomy has prolonged her life and will enable her to have a certain length of time, possibly a year or more, of comparative comfort, and has immediately avoided the repeated tappings of the abdomen. It is the same kind of reaction we see following splenectomy in what we call Banti's disease in the terminal stage when ascites develops. Splenectomy should be done in Banti's disease long before ascites has developed, but even in the presence of ascites splenectomy is not loo late. It will clear up the ascites and enable the patient to go on for a considerable length of time.

A Physician: Your prognosis is not very good?

Dr. Bock: Not very good, but it is much better with the spleen out than it was before the spleen was taken out. I do not see how she could have left the hospital had her spleen not been taken out. She was bedridden.

Dr. McClure: What seems to me to have been an interesting feature was that with this very high temperature, as high as 105°, she ran a very definite leucocytosis, and our attention was all directed to finding pus in the urine. Subsequently with subsidence of temperature to normal, leukopenia was manifest. Evidently there was some infectious process which stimulated leucocytosis, and having disposed of that she had a leukopenia typical of the disease.

Dr. Bock: Almost all of the cases having a leukopenia, such as pernicious anemia, aplastic anemia, Banti's disease, in the face of any infection that is really severe associated with a high fever develop a leucocytosis. We have seen a white count go as high as 40,000 in a case of pernicious anemia in which the white count had been running two or three thousand.

A Physician: How long have they been removing the spleen for cirrhosis of the liver?

Dr. Bock: I should say for the last ten years —not very many, but once in a while. I think we should do more than we have done.

DIAGNOSIS

Incarcerated ventral hernia in scar.
Cirrhosis of the liver.
Splenomegaly with ascites.

CASE 13242

WHEN NOT TO SQUEEZE A PIMPLE

Surgical Department

A boy of seventeen was sent from the hospital of one of the reform schools March 16 complaining of sore face.

March 7 he went to the school hospital with an infected finger which was opened the following day and treated with hot soaks and a wick. March 12 a small pustule was noticed on the left side of his upper lip. He picked at this. March 13 a small incision was made in the lip and a wick inserted. In the two days before he entered the Massachusetts General Hospital he became very drowsy and lethargic and his right eye closed up entirely. During the next three days there was no improvement. For several weeks he had had a boil on his right lower leg, now almost healed.

No family history and past history were obtained.

Clinical examination showed a semistuporous boy with marked reddening and induration of the skin of the face above the lower border of the jaw, more marked on the right side, completely closing the right eye. The cervical glands were enlarged and a little tender. There was slight obstruction of the nose but very little involvement. In the left upper lip was a small sinus discharging pus. The upper lip was tremendously thickened and indurated. The lesion extended up to the hair on the right side, only about half way up the cheek on the left. The neck was not involved at all. There was marked conjunctivitis and epiphora of the right eye, less in the left, which could be opened. The heart, lungs, abdomen and genitals were normal. Rectal examination was not done. There was an old draining sinus on the right fourth finger and a healing boil on the right leg. The reflexes were normal. No opisthotonos, Kernig or Babinski.

Urine negative at two examinations. Leucocyte count 39,000 to 23,000.

Temperature 102° to 105.7°, pulse 107 to 70 with a terminal rise to 160, respirations 20 to 40.

An oculist reported, "Left fundus normal for the most part. Veins in disc dilated, full and somewhat tortuous. Right eye shows marked chemosis. Cornea clear. The eye seems immobile. Patient to ill to find out." A nerve consultant found no abnormality in the left fundus or in the reflexes. He did not advise a lumbar puncture because he thought there was not enough to be gained by it.

It was found almost impossible to force fluids or treatment with any success because of the boy's semiconscious condition. March 19 he was sent to the X-ray Therapy Department, where the lip was given treatment. At this time there was questionable protusion of the right eyeball. March 19 the neck was slightly stiff. He had alternate unconsciousness and mania. March 20 there was a positive Kernig. The temperature was 105° by rectum. Both eyes were closed. That night the patient died.

Discussion

BY EDWARD L. YOUNG, JR., M.D.

Fortunately this is an uncommon condition, but the possibility of it should always be remembered when any infection starts on the upper lip or on the nose or cheek near the upper lip, because the lymphatic drainage or the blood drainage from this part of the face goes directly into the intracranial blood vessels, and if infection is carried in there the condition can rapidly become a very serious one. In fact the mortality in such a case if it is not interfered with is fifty per cent., and if it is interfered with, as this was, is variously estimated from eighty to one hundred per cent. So that it is a very serious situation when it does occur. In other words, an infection in this area should always be let alone, should be treated with heat, hot poultices or hot boric soaks until it is localized, and either no incision made until it breaks or a very small incision and continued drainage. Coagulation of the secretion and consequent blocking of a small opening should be prevented by wet packs of either boric solution or Wright's solution.*

The diagnosis is obvious when the patient is seen. This description is the description of a condition which cannot be missed if one has ever seen it. How far the infections which he may have had before this came on may have influenced this it is hard to say. Probably the only connection was that when he picked the boil he did actually increase the spread of it. So that as we read this, the very worst possible things were innocently done for it. It was picked by the patient and it was opened by the one who saw it first.

In view of the fact that there is positive counterindication for surgery the boy was not touched here, and the examinations that are reported after this were to try to get some hope that it had not spread and to increase the hopefulness of the prognosis.

The X-ray treatment was just a very long shot on an otherwise absolutely hopeless condition. I do not think there are any records that X-ray therapy has ever done anything in this condition.

The infection here is generally a staphylococcus, not a streptococcus, and the temperature can go very high—I have seen one case that registered 109° and a fraction before death—higher than any other condition I have seen except sunstroke.

I think Dr. Mallory will report the evidence of a general septicemia, probably from staphylococcus aureus.

Dr. Cabot: Would you like to guess at some of the organs in which it will be found?

Dr. Young: If it is staphylococcus it ought to hit the liver, heart, kidneys, lungs, and not the serous surfaces. If it is streptococcus it ought to hit the serous surfaces.

It is fortunate that this is such a rare condition because the mortality is tremendously high, and it is the hardest thing in the world to keep hands off, or when we see these patients with other physicians to persuade them to keep hands off.

Dr. Cabot: I wonder if there is any significance in the fact that this was a reform school boy. A good many of these boys are in very poor condition.

Dr. Young: They are often in very poor condition. On the other hand, I have seen a healthy, vigorous man carried out with this thing in three days. So that I think when it gets started it is no respecter of persons.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carbuncle of upper lip.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Septicemia, staphylococcus aureus.

ANATOMIC DIAGNOSES

1. *Primary fatal lesions*

Carbuncle of upper lip.
Staphylococcus aureus septicemia.

2. *Secondary or terminal lesions*

Localized meningitis.
Abscess of brain.
Metastatic abscesses of lungs.
Fibrinous pleuritis.
Encephalitis.

---

*Sodium citrate 1 part, sodium chloride 3 parts; 1 dram of mixture to one pint of warm water.

Inflammation of cavernous sinuses and Gasserian ganglion.

Dr. Mallory: The boy did have a pyemia from staphylococcus aureus. The localization was partially predicted but not entirely so.

In the first place, in the head there was a localized meningitis beneath the right temporal lobe, a small abscess in the temporal lobe, and then an acute encephalitis, we might call it, extending considerably farther into the brain, an infiltration of the process along the perivascular lymphatics throughout the right half of the brain.

As for the path by which this infection spread from the lips to the meninges, we found both cavernous sinuses full of pus. There was also free pus on the right side about the Gasserian ganglion, and entering the cranial cavity through both the foramen ovale and the foramen rotunda. So that I think it is also possible the infection had spread up the perineural lymphatics of the fifth nerve as well as by the blood stream.

As for the general systemic manifestations, the abdominal cavity was entirely free, as were all the abdominal organs. The lungs showed a great many miliary abscesses, some of them pretty close to the pleural surfaces. Possibly one of them had broken through into the pleura, because there was acute pleuritis over the lower lobe of the left lung.

INTERNATIONAL SYMPOSIUM PROCEEDINGS READY FOR DISTRIBUTION

A complete account of the proceedings of the International Symposium on Cancer Control, held at Lake Mohonk, September 20-24, 1926, will be ready for distribution the early part of June. This volume of some 360 pages will contain all the papers read at the Symposium together with an account of the discussion. The following list of titles and authors indicates the scope of the volume:

The Value of Coördinated Effort Among Surgeons, Pathologists and Others in the Control of Cancer—Sir John Bland-Sutton, Bt., Vice-Chairman of the British Empire Cancer Campaign; President of the Royal College of Surgeons.

Cancer Education in England—Dr. W. Sampson Handley, F.R.C.S., Professor of Surgery and Pathology in the Royal College of Surgeons of England; Surgeon to the Middlesex Hospital, London.

The Organized Movement Against Cancer in France—Professor Henri Hartmann, Director of the Anti-Cancer Center of Paris; Professor of Surgery at the University of Paris.

The Organization and Practical Working of the Centers Against Cancer in France—Professor Léon Bérard, Director of the Anti-Cancer Center at Lyons.

The Organized Movement for Cancer Control in Germany—Professor Ferdinand Blumenthal, Director of the Institute of Cancer Research in Berlin; Professor of Internal Medicine at the University of Berlin.

Cancer of the Stomach—Dr. Donald C. Balfour, Professor of Surgery at the Graduate School of Medicine, University of Minnesota, Minneapolis.

The Radiological Treatment of Cancer—Dr. Robert B. Greenough, Director of the Harvard Cancer Commission and of the Huntington Memorial Hospital, Boston; Assistant Professor of Surgery, Harvard University.

What Is the Value and What Should Be the Organization and Equipment of Institutions for the Treatment of Cancer by Radium and X-rays—Dr. Claude Regaud, Professor at the Pasteur Institute; Director of the Laboratory of Radiophysiology of the Radium Institute and of the Therapeutic Service of the Curie Foundation, Paris.

The Work of Diagnosing and Treating Cancer in North Germany—Dr. Robert Bierich, Director of the Institute of Cancer Research at Hamburg; Lecturer on Cancer Research at Hamburg University.

The Organized Movement for the Control of Cancer in America—Dr. George A. Soper, Managing Director of the American Society for the Control of Cancer, New York.

The Evidence of the Value of Education in the Control of Cancer—Dr. Joseph Colt Bloodgood, Associate Professor of Surgery at Johns Hopkins Hospital, Baltimore.

The Prevention of Cancer—Dr. James Ewing, Professor of Pathology, Cornell University Medical School; Director of the Memorial Hospital, New York.

How We Should Regard the New Theories of the Origin of Cancer—Professor Gustave Roussy, Professor at the Faculty of Medicine, University of Paris; Director of the Institute for Research and Treatment of Cancer at Villejuif for Suburban Paris.

The Tissue and Racial Specificities of Cancer—Dr. James A. Murray, F.R.S., Director of the Imperial Cancer Research Fund, London.

The Clinical Value of Certain Phases of Cancer Research—Dr. Francis Carter Wood, Professor of Clinical Pathology and Director of Institute for Cancer Research, Columbia University, New York.

The Practical Value of Researches into the Causes of Cancer—Dr. Archibald Leitch, Director of the Cancer Hospital Research Institute, London.

The Prevalence of Cancer as Revealed by Mortality Returns and at Autopsy—Professor W. M. deVries, President of the Netherlands Cancer Institute; Professor of Pathologic Anatomy at the University of Amsterdam.

The Mortality from Cancer Among People of Different Races—Dr. H. J. Deelman, Professor of Pathology and Director of the Institute of Pathology, University of Groningen, Holland.

The Chance of Death from Cancer—Dr. Louis I. Dublin, Statistician, Metropolitan Life Insurance Company, New York.

Cancer as a Specialty—Dr. George H. Semken, Attending Surgeon, New York Skin and Cancer Hospital; Consulting Surgeon, Institute of Cancer Research, Columbia University.

Newspaper Publicity in the Control of Cancer—Dr. Harry C. Saltzstein, Director of Cancer Clinic, Harper Hospital, Detroit.

The Relation of the General Practitioner to the Cancer Problem—Dr. Howard Lilienthal, Consulting Surgeon to Mount Sinai and Bellevue Hospitals; Professor of Clinical Surgery, Cornell University Medical School.

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The Massachusetts Medical Society

THE ANNUAL MEETING

THE one hundred and forty-sixth anniversary meeting was held at the Hotel Statler Boston with clinics in the local hospitals. Three days were devoted to the exercises being one more than has been the custom.

The registration showed twelve hundred and thirty-eight in attendance which is the largest in the history of the Society and is a good proportion of the four thousand three hundred and sixty-six fellows.

The clinical exercises at the hospitals drew at least three hundred and fifty fellows. It was impossible to keep a correct record because there were varying numbers from time to time.

Dr. Joslin's clinic attracted the largest number which exceeded one hundred and twenty-five, the Massachusetts General Hospital, The Peter Bent Brigham, the Boston City and the Children's about fifty each, the Massachusetts Homeopathic thirty-five, the Lying-in fifteen and the Carney eight. Three hundred and fifty doctors interested in purely clinical exercises is a good showing and warrants a repetition of this feature. These persons will carry back to their local hospitals information of great value.

The combination of surgical and medical problems of certain groups of diseases in the second and third days was especially interesting because of the breadth of the survey and the demonstration of the responsibilities of the internist and surgeons in dealing with these afflictions.

The large attendance at the tuberculosis section gave evidence of the continued interest in this subject. It is evident that the progress already made in dealing with tuberculosis is not construed as indicating that the profession has been led to feel that the fight has been won but rather that it has only been begun. Massachusetts evidently stands as a state which is concentrating on the study of tuberculosis quite as much as any other. The pioneer work of interesting the state and the medical profession in dealing with this, one of the major problems of humanity, has led to general coöperation.

Pediatrics is also growing in its appeal to the family doctor and the discussions were of great interest, especially the idea that common sense in the application of scientific knowledge is within the range of the well-educated family doctor.

Physiotherapy is making a strong appeal to the profession as was shown by the very large attendance of the section dealing with Radiology and Physiotherapy. There seems to be a hope that the gap existing in treating many conditions by long-recognized therapeutic measures will be bridged to a considerable extent by physiotherapy. Various forms of light and electricity have been seized upon by irregulars who have found that scintillating apparatus appeals to the impressible mind and the honest physician is anxious to know how much can be accepted in this field. The questions involved are being studied by capable persons and before long reliable information will be available. The pioneers among regular practitioners have seemed at times very enthusiastic about the curative effects of diathermy for example but general endorsement of some of the claims is not yet forthcoming so that we will be appreciative of authoritative opinions and look to further functioning of this section.

We are glad to note that the section of obstetrics and gynecology has shown promise of living up to the expectations of usefulness which led to its formation. The attendance was large and plans are under way for the publication of informative articles from time to time throughout the year.

The business sessions of the Society and the Council were conducted with dispatch. The reports of committees were so well prepared that discussions seemed unnecessary and were accepted. The records which are being prepared by the Secretary will be ready for publication very soon and should be read carefully for they constitute the details of the history of the Society.

The only official social functions were in the Pops Concert and the Annual Banquet, both of which were most enjoyable. The after-dinner speaking was especially good. Digests of the speeches will appear in later issues.

The Society was especially favored by the presence of Dr. Allen O. Whipple, New York, N. Y.; Dr. John H. Gibbon, Philadelphia; Dr. Henry G. Bugbee, New York; Dr. B. R. Kirklin, Mayo Clinic, Rochester, Minn.; Dr. Frank E. Adair, New York; Dr. W. Walter Wasson, Denver, Colo.; Dr. Grant E. Ward, Baltimore, Md.; Dr. Rock Sleyster of The Board of Trustees of the A. M. A. and representatives of the other New England States.

It is not invidious to speak of this session as the most successful in the history of the Society for the long history of instructive and stimulating meetings of the past has been a record of achievements which has made foundations on which the officers have built this last very successful meeting. It is fitting at this time to congratulate the Committee of Arrangements for its untiring efforts to make this meeting one to be long remembered. The personal efforts of the chairman, Dr. L. S. McKittrick, are especially noteworthy.

No person has ever worked more assiduously than the retiring president, Dr. James S. Stone, nor exhibited greater diplomacy, coupled with an ambition to mold the Society into a harmonious and efficient organization. His efforts have been augmented by a loyal constituency among the officers and fellows. His interest in the Society and in the practice of medicine will prevent his retirement from active participation in its affairs. He will continue to be a counsellor to whom all will look for guidance.

The officers of the Society will maintain the traditions of the previous one hundred and forty-six years with the cordial coöperation of the fellows.

A NEW SYPHILIS TEST

With the discovery of Schaudinn of the Treponema pallidum and the application by Wassermann of the Bordet phenomenon to the serum diagnosis of luetic infections, the diagnosis and treatment of syphilis were removed from the vague realm of empiricism to that of rational medicine.

These discoveries made it possible by establishing an immediate diagnosis to begin treatment weeks earlier than formerly, and thus afforded the afflicted patient a far better chance for cure. Furthermore, an intelligent use of the Wassermann test gave us for the first time a gauge of the efficacy of specific treatment. Probably no biologic test has been subjected to such critical study as has the Wassermann test, because upon no other biologic test did such considerations of importance depend. A false, positive result might condemn an uninfected person to long, costly, and wearisome treatment, while a false negative might release from treatment a person who still harbored the Treponema. No wonder then that investigators have striven to find ways for increasing and insuring the accuracy of the Wassermann test.

At first the reaction seemed to be an antigen-antibody-complement combination just as was postulated for the true Bordet phenomenon, but continued study has shown that instead of its being a true immunity reaction, at least in the Ehrlich meaning, it is probably a physical reaction between an unknown specific substance in syphilitic serum and a non-specific lipoid. Working from this hypothesis, Sachs-Georgi, Meinecke, Bruck, Kahn and others have developed tests in which the precipitating effects of luetic serum on lipoid emulsions have been employed. Hinton, in a paper published in this number of the Journal, reports a further study of this physical principle and its clinical applications to syphilis. In reading the report of his study, one is impressed with the simplicity of his test, and although his cases are yet too few to permit any final judgment, it would seem that this test, which will probably be called the "Hinton test," is quite as reliable in its results as is the Wassermann test.

If the Wassermann test, with its relatively high cost, its delicate reagents; difficult of preparation and subject to many deleterious influences; with the skill required in its performance, and the judgment demanded for its proper interpretation, and with its false positives and negatives, if this test can be replaced by a test, inexpensive to use, with simple, easily prepared and stable reagents, requiring no great skill in setting up the test or in reading the results, a test giving results at least as dependable as those of the Wassermann test, then the contribution of Hinton should constitute an advance in the aid which the laboratory can give the clinician in the diagnosis and treatment of syphilitic infections.

PROGRESS IN THE DEVELOPMENT OF CANCER CLINICS

A Tumor Clinic, the fifth of the clinics to be started in connection with the state program for cancer control, was opened on May 27th at the Lowell General Hospital and will be held each Friday morning at 10 A. M. with a rotating staff in attendance. On the opening morning nine patients reported for diagnosis, three of whom proved to be positive cancer. Two of the three were given a favorable prognosis and one was declared inoperable. Forty-seven patients were admitted at the next session. The full staff of the clinic consists of:

Surgeons: Dr. J. A. Gage, Dr. G. F. Martin, Dr. A. R. Gardner, Dr. J. H. Lambert, Dr. F. R. Mahony, Dr. M. L, Alling.

Physicians: Dr. H. W. Jewett, Dr. D. J. Ellison, Dr. J. E. Lamoureux.

X-ray: Dr. R. C. Stewart.

Pathologist: Dr. J. Y. Rodger.

Urologist: Dr. H. L. Leland.

Eye and Ear: Dr. G. A. Leahey.

Radiologist: Dr. J. H. Lambert.

The staff operates under an executive committee appointed by the Lowell Medical Fraternity. This committee assumes administrative control of the clinics, including the expenditure of the state cancer funds allocated to Lowell. The following well-known physicians of Lowell make up the executive committee:

Dr. G. Forrest Martin, Chairman; Dr. M. L. Alling, Dr. J. H. Lambert, Dr. G. A. Leahey, Dr. J. E. Lamoureux, Dr. F. R. Mahony, Dr. A. R. Gardner, Dr. J. A. Gage.

Plans are not yet completed with regard to follow-up work for the clinic, but the suggestion has been made that it be done through existing resources in the community. A strong committee of representative citizens is assisting the executive committee in working out this problem and in carrying on educational work among the people at large.

Clinics are also now running in Newton at the Newton Hospital; in Worcester at the following hospitals: Fairlawn, Memorial, Worcester Hahnemann, Worcester City, Louis Pasteur, Harvard and St. Vincent's; in Springfield at the Mercy, Wesson and Springfield hospitals, and in Lynn at the Lynn Hospital.

In Newton the Medical Committee is as follows:

Dr. G. L. West, Dr. E. D. Leonard, Dr. S. C. Dalrymple.

In Worcester the Medical Committee is as follows:

Dr. K. E. Emerson, Chairman; Dr. B. H. Alton, Dr. E. A. Fisher, Dr. M. F. Fallon, Dr. E. L. Hunt, Dr. A. P. LaChance, Dr. E. H. Trowbridge.

In Springfield, the Medical Committee is as follows:

Dr. C. F. Lynch, Chairman; Dr. J. B. Comins, Dr. E. L. Davis, Dr. S. E. Ryan, Dr. F. B. Sweet, Dr. H. W. VanAllen.

In Lynn the Medical Committee is as follows: Dr. W. T. Hopkins, Chairman; Dr. N. P. Breed, Secretary; Dr. O. C. Blair, Dr. E. M. Dolloff, Dr. J. W. Trask.

With the opening of the Pondville Hospital at Norfolk on June 21, 1927, another step will have been taken in the program of the State Department of Public Health looking toward the control of cancer. The hospital should work very closely with the clinics in meeting the needs which the clinics will uncover.

THIS WEEK'S ISSUE

CONTAINS articles by the following authors:

TRUESDALE, PHILEMON E., M.D. Harvard Medical School 1898; F.A.C.S.; Chief of the Earle P. Charlton Surgery, Fall River, Massachusetts; Fellow of the American Surgical Association and a member of the New England Surgical Society. His subject is: "Group Practice." Page 973. Address: Fall River, Mass.

CHEEVER, DAVID, A.B.; M.D. Harvard Medical School 1901; F.A.C.S.; Associate Professor of Surgery, Harvard Medical School; Surgeon to the Peter Bent Brigham Hospital and a member of the New England Surgical Society. His subject is: "Lister: 1827-1927." Page 984. Address: Peter Bent Brigham Hospital, Boston.

HINTON, WILLIAM A., S.B.; M.D. Harvard Medical School 1912; Assistant Director Division of Biologic Laboratories, Massachusetts Department of Public Health; Pathologist, Boston Dispensary. His subject is: "Glycerol-Cholesterol Precipitation Reaction in Syphilis." Page 993. Address: Wassermann Laboratory, Harvard Medical School, Boston.

GRUND, JACOB L., M.D. Harvard Medical School 1921; Member New England Dermatological Society; Formerly Junior Physician, Department of Dermatology and Syphilology, Boston Dispensary. His subject is: "Bismuth Eruptions." Page 996. Address: 483 Beacon Street, Boston.

LEE, HAROLD G., M.D. Yale University School of Medicine 1922; Assistant Orthopedic Surgeon, Carney Hospital, Boston; Orthopedic Surgeon, Elliot Community Hospital, Keene, New Hampshire; Central Maine General Hospital; St. Luke's Hospital, New Bedford, Mass.; and the Sol-E-Mar Hospital for Crippled Children, South Dartmouth, Mass. His subject is: "Avulsion Fracture of the Os Calcis." Page 1000. Address: 240 Newbury Street, Boston.

WALKER, IRVING J., A.B.; M.D. Harvard Medical School 1907; F.A.C.S.; Visiting Surgeon, Boston City Hospital; Massachusetts Woman's Hospital; Supervising Surgeon, Malden Hospital; Consulting Surgeon to Chelsea Memorial; Choate Memorial; and Boston State Hospitals. His subject is: "Osteogenic Sarcoma of Humerus." Page 1001. Address: Boston City Hospital, Boston.

HEPBURN, J. J., A.B.; M.D. Harvard Medical School 1909; F.A.C.S.; Assistant Visiting Surgeon, Boston City Hospital; Assistant Professor in Surgery, Tufts College Medical School. His subject is: Ureteral Stone with Perforation." Page 1003. Address: 56 Bay State Road, Boston.

Appel, Bernard, D.N.B.; M.D. Tufts College Medical School 1923; Junior Visiting Physician for Diseases of the Skin, Boston City Hospital; Assistant Physician, Department of Syphilis, Massachusetts Homeopathic Hospital; Teaching Assistant, Department of Dermatology, Tufts College Medical School; Clinical Instructor in Syphilis, Boston University School of Medicine. His subject is: "Paget's Disease and Syphilis." Page 1004. Address: 485 Commonwealth Avenue, Boston.

THE EXHIBITION OF OBJECTS OF ART

In order to stimulate interest in this exhibition which will be at the Boston Medical Library about the first of November, the Committee in Charge suggests that the vacation period may be employed in perfecting work which may be submitted for this exhibition.

Interest in this project is growing and it is hoped that all physicians who may like to submit work done by themselves will coöperate and make this undertaking successful.

The Committee will be pleased at any time to give information as to details.

Address the Committee on Exhibition of Objects of Art, care of the Boston Medical Library, 8 The Fenway, Boston.

MISCELLANY

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1926

With comments that have appeared in *The Journal of the A. M. A.* Cloth. Price, $1.00. Pp. 73. Chicago American Medical Association, 1927.

Those who are interested in the work of the Council on Pharmacy and Chemistry, and this includes all who have to do with the therapeutic use of drugs, look forward each year to the volume which gives the reasons for the Council's rejection of the preparations found unacceptable for inclusion in New and Nonofficial Remedies. These reasons are given in the Annual Reprint of the Reports of Council on Pharmacy and Chemistry; in addition the book gives the reasons for the omission of certain preparations from New and Nonofficial Remedies during the year, and contains several special reports of a general nature authorized by the Council for publication.

Reports are given on the following articles found not acceptable for New and Nonofficial Remedies: Allonal, Animasa, three benzyl benzoate preparations, Ceanothyn, Cresog, Firma Chloro, Idozan, Malt Nutrine, Murarsenide, Naftalan, Neo-Reargon, Nontox, Numoquin, Oleosolution, "Pabst Extract—The 'Best' Tonic," Phenoseptine Cones and Phenoseptine Powder, Pollen Antigen Spring Type-Lederle, Rad-X-Solution A and Rad-X-Solution B, Robes' Antirheumatic Injection, Sodium Methylarsenate (De Marsico), Ster-Alco, Sulcitacium, Tetradol, Thymo-Borine, Toxivi, Toxok, and Triophos. Besides these there are reports on a number of articles that have been omitted from New and Nonofficial Remedies.

The volume also contains the following special reports of current interest to physicians: a report on the status of bacillus acidophilus and bacillus bulgaricus therapy, on the basis of which the N. N. R. article on Lactic Acid-Producing Organisms has been revised and rewritten; a report dealing with the esteem in which antistreptococcus serum is now held by leading surgeons, gynecologists and obstetricians, prepared by Dr. Emil Novak on the basis of the answers to a questionnaire sent to representative members of these groups; and a preliminary report on the status of the new drug, Ephedrine.

Among the preparations newly admitted to the book are: Isacen, a product related to phenolphthalein; Ipral, a barbital hypnotic; a cod liver oil concentrate having a definite vitamin A and vitamin B potency; and three erysipelas streptococcus antitoxin preparations.

New and Nonofficial Remedies is indispensable to any physician who prescribes drugs. It contains information about medical products which cannot be found in any other publication.

SCARLET FEVER AND OTHER COMMUNICABLE DISEASES SHOWN INCREASED IN SURVEY COVERING 40 STATES

Slight increases, as compared with last year, in the prevalence of scarlet fever, diphtheria, smallpox, typhoid fever and poliomyelitis (infantile paralysis) were reported to the United States Public Health Service by State Health Officers for the week ended May 14 of this year, the Public Health Service announced June 4 in a weekly review on the prevalence of communicable diseases.—*U. S. Daily.*

RECENT DEATHS

DAVENPORT—Dr. Bennett Franklin Davenport, medical chemist, a retired member of the Massachusetts Medical Society, died in Cambridge, June 3, 1927, aged 82.

The son of Charles and Joan Hagan Davenport, he was born in Cambridge, May 28, 1845. After study at Cambridge High School he entered Harvard and received his A.B. in 1867 and an A.M. in 1871. Going to New York, he took his M.D. at the College of Physicians and Surgeons, Columbia, in 1871, also an M.D. from Harvard in the same year. On returning to Boston he was assistant to Henry I. Bowditch for a year or two. From 1879 to 1886 Dr. Davenport was professor of practical and analytical chemistry at the Massachusetts College of Pharmacy and from 1882 to 1892 chemist to the Massachusetts State Board of Health.

Among his memberships were the Massachusetts Medico-Legal Society, American Public Health Association, American Chemical Society, British Chemical Society, Societé de Chémie de Paris, Deutsch Chem. Gesellschaft, Verein Analyt. Chemie. For many years Dr. Davenport maintained an office in Boston, where he made analyses for public health purposes.

DONOVAN—Dr. Sylvester Edward Donovan, last year president of the Bristol South District Medical Society, died suddenly from a heart attack at St. Luke's Hospital, New Bedford, May 30, 1927, at the age of 56.

A native of Providence, R. I., he was educated in the New Bedford schools and at the New York University Medical School, where he received his M.D. in 1894. Then he was an interne at the Blackwell's Island Hospital and at the Government Hospital for the Insane at St. John, New Brunswick. He settled in practice in New Bedford in 1896.

Dr. Donovan knew no hours and his profession was his life's devotion. His idea of a vacation was to attend some postgraduate school, and his devotion to duty is believed to have been the factor that undermined his health.

In his academic days he was an athlete of promise. He played on his school football and baseball teams and was rated as one of the leading catchers in his section. He maintained an interest in sports until his death and was in frequent attendance at athletic contests in New Bedford.

Dr. Donovan was a member of the Massachusetts Medical Society and of the American Medical Association, also a member of Bishop Stang Assembly, Fourth Degree, Knights of Columbus; a member of the New Bedford Lodge of Elks, of the Plymouth Club and of the Holy Name Society of St. James' Church.

He was unmarried and is survived by one brother.

HOUGH—Dr. Garry de Neuville Hough, former prominent surgeon of New Bedford, died at his birthplace, Vineyard Haven, May 31, 1927, at the age of 66.

After being graduated from Friends Academy he entered Harvard and took his A.B. with the class of 1881, *magna cum laude*, with honors in chemistry. His M.D. was received from Bellevue Hospital Medical College in 1884, he later serving as house officer in Bellevue Hospital.

Dr. Hough took up practice in New Bedford in 1885, being associated with his father, Dr. George T. Hough. He served as visiting surgeon at St. Luke's Hospital in New Bedford, and in 1888 was appointed medical examiner by Governor Russell, a position he held for many years, resigning several years ago, following a shock that forced him to retire from his profession.

Dr. Hough was a charter member of the American College of Surgeons; he responded to the call for relief after the Halifax disaster; in 1913 he was president of the Massachusetts Medico-Legal Society; he was a member of the Committee on Ethics and Discipline of the Massachusetts Medical Society and was a councilor of that Society from the Bristol South District for many years.

He is survived by his wife, Mrs. Margaret (Soule) Hough, and three children, Dr. Garry de N. Hough of Springfield, a Fellow of the State medical society, and by Miss Doris Soule Hough and Miss Katherine T. Hough.

HUNTRESS—Dr. Leonard Huntress, a retired member of the Massachusetts Medical Society, president of the Middlesex North District in 1897, died at his home in Lowell, of heart disease complicated by rheumatism, June 3, 1927, aged 78.

Dr. Huntress was born in Tewksbury, September 25, 1848, the son of Leonard and Lydia McKinnon Huntress. He received an A.B. from Harvard in 1870 and then studied medicine in Lowell and in Philadelphia at Jefferson Medical College. He took his M.D. at the College of Physicians and Surgeons, New York, in 1874. Previous to studying medicine he taught in a military academy at Poughkeepsie, N. Y. The years 1874 to 1876 were spent in medical study at Vienna and Berlin, abroad. He settled in Lowell in 1876 and joined the Massachusetts Medical Society. In 1881 he married Elizabeth Eaglesham; they had three children. Dr. Huntress was a member of the Lowell School Board, a trustee of the State Almshouse and Farm for 25 years; chairman of the Lowell Board of Health for several years, and president of St. John's Hospital.

JACQUES—Dr. Louis Desire Onesiphore Jacques, a roentgenologist of Worcester, a member of the staff of the Louis Pasteur Hospital since its opening, died at his home in Worcester, May 30, 1927, aged 54.

He was a native of Worcester, took an A.B. at Ottawa University, Toronto, in 1893, and an M.D. at Laval University, Quebec, in 1895. He practiced for one year in Brattleborough, Vt., and then settled in his native city. He was a member of the Franco-American Medical Society and of the Catholic Order of Foresters, the Artisans' Society and the St. Jean Baptiste Society of Worcester.

Dr. Jacques is survived by his widow, Mrs. Lumina Rocheleau Jacques, and by one son.

STEVENS—Dr. William Russell Stevens died in Boston, following an operation, June 5, 1927, at the age of 47.

Dr. Stevens was a native of Marshfield, was graduated from Tufts College Medical School in 1906 and settled in Abington, where he passed the rest of his life.

He was a member of Corner Stone Lodge, A. F. and A. M., of Duxbury, and also of John Cutler Lodge of Masons. He was a member of the Massachusetts Medical Society and the Hatherly Medical Society, holding an official position in the latter organization.

He is survived by his widow and three children, his mother and a sister in Marshfield.

WHEELER—Dr. John Wheeler, surgeon, died suddenly at his home in Plymouth. N. H., June 5, 1927, aged 55.

He was born May 16, 1872, in Alton, N. H., the son of Dr. Phineas P. Wheeler and Sarah M. Colby Wheeler. He attended Exeter and Brewster academies and was graduated from Dartmouth College in the class of 1895 and from Dartmouth Medical School in 1898.

After graduation from the medical school he was on the staff of the Bridgewater State Hospital at Bridgewater, Mass., for one year. In 1899 he settled in Plymouth, N. H., in which town and surrounding towns he has practiced medicine ever since.

On June 12, 1907, he married Miss Celia M. Morton of South Ohio, N. S. He leaves surviving him his widow and three sons, Phineas Wheeler of the class of 1930 at Dartmouth, John, a junior in high school, and Morton, age 12, and two sisters and a stepbrother.

Dr. Wheeler was a member of the Psi Upsilon and Sphinx fraternities at Dartmouth, a member of the Olive Branch Lodge of Masons of Plymouth, N. H., and a member of the American Medical Association, the New Hampshire State Medical Society and the Grafton County Medical Society.

ZINGHER—Dr. Abraham Zingher, who was engaged at work on a refinement of the Dick immunization treatment for scarlet fever, died June 5 at the age of 42 in his office at the City Research Laboratory of New York City.

CORRESPONDENCE

THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

June 7, 1927.

Editor, Boston Medical and Surgical Journal:

In answer to your recent inquiry I have to say that no offer has been made by William F. Koch to the American Society for the Control of Cancer of any information concerning the composition or method of preparation of his synthetic antitoxin, nor has such an offer on his behalf reached this office.

Dr. Koch sought the privilege of making a statement before the International Meeting on Cancer Control held at Lake Mohonk, September 20-24, 1926, on the results of his studies on the subject of cancer, this letter being received by the American Society for the Control of Cancer two days before the meeting actually took place. Dr. Koch said in the course of his brief letter, "In accordance with the ethics of the profession, after presenting my paper on the subject, I am prepared to submit to any fair-minded, properly constituted committee, appointed by the Convention, a detailed analysis in full of the Antitoxin, as well as the records referred to in my paper."

In other words, the composition of the compound was to be given to a committee appointed by the meeting and only after Dr. Koch had made a presentation of his case before the whole gathering. This proposition was not an offer to the American Society for the Control of Cancer of information concerning the composition or preparation of the Koch compound.

Dr. Koch was informed in reply to his letter that the Mohonk meeting was not a suitable occasion for the presentation of new facts and opinions before the medical profession nor could such a presentation be arranged for in the interval between the receipt of his letter and the opening of the Symposium. As a matter of fact, all the papers and addresses delivered at the Mohonk meeting were of a different character from one promoting a proprietary cure. They had been prepared long in advance. All the details of the conference had been formally decided upon long before Dr. Koch's letter was received.

On December 18 a letter was sent by Dr. C. Everett Field, first vice-president of the Koch Cancer Foundation of Detroit, to Mr. William Lawrence Saunders, offering to submit the Koch treatment for investigation in connection with Mr. Saunders' prize offer of fifty thousand dollars for a reliable method of curing cancer. Inasmuch as the Saunders' awards are to be made on a decision reached by the American Society for the Control of Cancer and approved by the American Medical Association and the American College of Surgeons, this application was referred to this Society. Dr. Field's proposition was this:

To quote Dr. Field's letter, the Koch Cancer Foundation was "willing to have the treatment observed by any properly elected cancer commission, preferably a group of men familiar with bio-chemistry.

"The only provisions to be suggested on our part would be the following:

"I will bring to this cancer investigating committee five or ten patients whom I have diagnosed as suffering from cancer. When I have found the committee confirms my diagnosis, I will treat the selected patients.

"These patients will be shown to the committee at different intervals for examination, and when I am satisfied that I have accomplished results I will again submit the patients to the physicians, who can then report the results.

"Inasmuch as these patients are to be under my control I suggest that they be photographed and marked at the time of the first examination in order that no question of identity may arise.

"If such an investigation can be made, Dr. Koch will, as stated to the American Society for the Control of Cancer, publish his formula in every detail."

Again, the offer to announce the Koch formula was made contingent upon a presentation or investigation of the merits of the treatment, the method of presentation or investigation being specified by the Koch interests.

Dr. Field's proposition to investigate the Koch treatment could not be accepted for a number of reasons. It did not comply with the conditions prescribed by Mr. Saunders in order to control the investigation of the claims of applicants for the awards. Anybody who believes he has a cure for cancer must subscribe unqualifiedly to the methods of investigation and answer unreservedly the questions which the referees find necessary. Anyone who is not prepared to state plainly and without condition the composition of his compound and the proper method of its employment has little chance of investigation.

Mr. Saunders' object was to bring about the discovery of a procedure which was applicable to human cancer in substantially all its forms and locations excepting only advanced cases. Its efficacy must be comparable with that of the procedures which exist for the control of smallpox, yellow fever or diphtheria.

All propositions must be recommended for investigation by reliable medical or scientific sources in order to receive serious consideration. In other words, if an association of reputable medical men or a group of physicians in good standing in their profession proposed that the Koch compound and treatment be investigated for the Saunders' award, and assurance were given by the Koch Cancer Foundation that it would agree to a full and fair investigation of its compound and its method of application, there is every reason to believe that the matter would be given serious consideration.

Two conditions named would have to be complied with by the Koch Foundation or any other corporation or person before any investigation was made. First, full information would have to be given concerning the composition and preparation and proper use of the compound; and second, the applicant would have to agree to whatever investigation the investigators considered it necessary to make. The circumstances and conditions under which claims put forward are investigated for the Saunders Cancer Awards rest entirely with the investigators.

Very sincerely,

George A. Soper, Ph.D., *Managing Director.*

CONNECTICUT DEPARTMENT OF HEALTH

Morbidity Report for the Week Ending June 4, 1927

Diphtheria	26
Last week	36
Diphtheria bacilli carriers	3
Scarlet fever	68
Last week	76
Measles	44
Last week	57
Whooping cough	39
Last week	18
Bronchopneumonia	16
Chickenpox	114
Encephalitis, epidemic	1
German measles	8
Influenza	4
Leprosy	1
Mumps	57
Pneumonia, lobar	20
Septic sore throat	1
Trachoma	1
Tuberculosis, pulmonary	17
Tuberculosis, other forms	3
Chancroid	3
Gonorrhea	67
Syphilis	29

DISEASE INCIDENCE IN CONNECTICUT
WEEK ENDING MAY 28

DISEASE	1927					1926			
	Week ending May 7	Week ending May 14	Week ending May 21	Week ending May 28	Average cases reported for week corresponding to May 28 for past 7 yrs.	Week ending May 8	Week ending May 15	Week ending May 22	Week ending May 29
Actinomycosis	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-
Botulism	-	-	-	-	-	-	-	-	-
Cerebrospinal Meningitis	1	-	1	-	1	1	1	2	1
Chickenpox	112	96	141	139	50	61	63	66	48
Conjunctivitis, Infec.	1	-	1	-	3	1	-	1	3
Diphtheria	22	20	22	36	32	25	16	27	14
Dysentery, Amoebic	-	-	-	1	-	-	-	-	-
Dysentery, Bacillary	-	-	-	-	-	-	1	-	-
Encephalitis, Epidemic	-	-	-	1	1	1	1	-	1
Favus	-	-	-	-	-	-	-	-	-
German Measles	34	10	26	31	30	121	43	23	64
Hookworm Infection	-	-	-	-	-	-	-	-	-
Influenza	4	3	2	1	4	9	12	4	7
Leprosy	-	-	-	-	-	-	-	-	-
Malaria	1	-	-	-	-	1	-	-	-
Measles	51	58	44	57	250	711	522	471	544
Mumps	45	36	43	75	37	9	9	12	12
Paratyphoid Fever	-	-	-	-	3	-	-	-	-
Pneumonia, Broncho*	26	34	35	26	28*	42	49	39	41
Pneumonia, Lobar	75	34	39	39	22	54	49	32	33
Poliomyelitis	-	-	1	-	-	-	-	-	-
Scarlet Fever	103	105	99	76	72	78	95	81	84
Septic Sore Throat	3	3	-	3	-	-	-	1	-
Smallpox	-	-	-	-	1	-	-	-	-
Tetanus	-	-	-	-	-	-	-	-	-
Trachoma	-	-	-	-	-	-	-	-	-
Trichinosis	-	-	-	-	-	-	-	-	-
Tuberculosis, Pulmonary	35	38	30	26	33	24	31	50	39
Tuberculosis, (o.f.)	6	6	3	3	4	-	-	1	12
Typhoid Fever	1	-	-	1	5	3	-	9	-
Typhus Fever	-	-	-	1	-	-	-	-	-
Whooping Cough	60	67	14	18	87	55	54	62	39
Gonorrhoea	20	15	36	51	19	21	14	57	10
Syphilis	16	12	26	32	32	31	26	36	17

*Average for two years. Made reportable January 1, 1925.

Remarks: No cases of cholera, Asiatic, glanders, plague, rabies in humans and yellow fever during the past seven years.

DISEASE INCIDENCE IN CONNECTICUT
WEEK ENDING JUNE 4

DISEASE	1927					1926			
	Week ending May 14	Week ending May 21	Week ending May 28	Week ending June 4	Average cases reported for week corresponding to June 4 for past 7 yrs	Week ending May 15	Week ending May 22	Week ending May 29	Week ending June 5
Actinomycosis	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-
Botulism	-	-	-	-	-	-	-	-	-
Cerebrospinal Men.	-	1	-	-	1	1	2	1	2
Chickenpox	96	141	139	114	45	63	66	48	54
Conjunctivitis, Inf.	-	1	-	-	-	-	1	3	-
Diphtheria	20	22	36	26	33	16	27	14	18
Dysentery, Amoebic	-	-	1	-	-	-	-	-	-
Dysentery, Bacillary	-	-	-	-	-	1	-	-	-
Encephalitis, Epid.	-	-	1	1	-	1	-	1	-
Favus	-	-	-	-	-	-	-	-	-
German Measles	10	26	31	8	18	43	23	64	25
Hookworm Infection	-	-	-	-	-	-	-	-	-
Influenza	3	2	1	4	4	12	4	7	6
Leprosy	-	-	-	1	-	-	-	-	-
Malaria	-	-	-	-	1	-	-	-	-
Measles	58	44	57	44	249	522	471	544	421
Mumps	36	43	75	57	39	9	12	12	5
Paratyphoid Fever	-	-	-	-	-	-	-	-	-
Pneumonia, Broncho*	34	35	26	16	20*	49	39	41	24
Pneumonia, Lobar	34	39	39	20	18	49	32	33	25
Poliomyelitis	-	1	-	-	-	-	-	-	-
Scarlet Fever	105	99	76	68	66	95	81	84	80
Septic Sore Throat	3	-	3	1	-	-	1	-	-
Smallpox	-	-	-	-	1	-	-	-	-
Tetanus	-	-	-	-	-	-	-	-	-
Trachoma	-	-	-	1	-	-	-	-	-
Trichinosis	-	-	-	-	-	-	-	-	-
Tuberculosis, Pul.	38	30	26	17	30	31	50	39	32
Tuberculosis, (o.f.)	6	3	3	3	2	-	1	12	4
Typhoid Fever	-	-	1	-	4	-	9	-	1
Typhus Fever	-	-	1	-	-	-	-	-	-
Whooping Cough	67	14	18	39	49	54	62	39	29
Gonorrhoea	15	36	51	67	14	14	57	10	5
Syphilis	12	26	32	29	22	26	36	17	13

*Average for two years. Made reportable January 1, 1925.

Remarks: No cases of cholera, Asiatic, glanders, plague, rabies in humans and yellow fever during the past seven years.

NEWS ITEMS

HARVARD MEDICAL SCHOOL NEWS—The resignation of Charles James White, M.D., as Edward Wigglesworth Professor of Dermatology has been accepted, effective September 1, 1927. Dr. White becomes Emeritus.

William Phillips Graves, M.D., has been appointed the W. H. Baker Professor of Gynecology effective September 1, 1927.

Harry Gage Wyer, M.D., Major M. C., U. S. A., has been appointed Professor of Military Science and Tactics, to serve while detailed here by the United States government.

Moseley Traveling Fellowships for 1927-28 have been awarded to James C. White, M.D., and Harlan F. Newton, M.D.

The corporation at its last meeting approved the following appointments for one year from September 1, 1927:

Lecturers—Carlos Chagas, on Tropical Medicine; William Edgar Deeks, Tropical Medicine; Alexander Hamilton Rice, Diseases of South America.

Associates—William Lloyd Aycock, in Preventive Medicine and Hygiene; Francis Browne Grinnell, Bacteriology and Immunology; Daniel Fiske Jones, Surgery; Maynard Ladd, Pediatrics; Joseph William Schereschewsky, Preventive Medicine and Hygiene; Harry Caesar Solomon, Psychiatry.

Instructors — Arthur Wilburn Allen, in Surgery; Percival Bailey, Neuropathology and Surgery; Philip Bard, Physiology; Harry Aldrich Barnes, Laryngology; John Harper Blaisdell, Dermatology; Gerald Blake, Medicine; Frederick Leon Bogan, Otology; Albert Howell Brewster, Orthopedic Surgery; Charles Leonard Brown, Medicine; Lloyd Thornton Brown, Orthopedic Surgery; Edward Delos Churchill, Surgery; George Clymer, Neurology; Bronson Crothers, Neurology; Robert Laurent DeNormandie, Obstetrics; George Alfred Dix, Syphilology; Paul Waldo Emerson, Pediatrics; Ronald Mansfield Ferry, Physical Chemistry; Henry Joseph FitzSimmons, Orthopedic Surgery; Frank Fremont-Smith, Neuropathology; Maurice Fremont-Smith, Medicine; Frederick Eugene Garland, Laryngology; Joseph Garland, Pediatrics; Ralph Kalb Ghormley, Orthopedic Surgery; Joseph Lincoln Goodale, Laryngology; Gustave Philip Grabfield, Pharmacology; Hyman Green, Pediatrics; Robert Montraville Green, Gynecology; Daniel Crosby Greene, Laryngology; Torr Wagner Harmer, Anatomy; Harry Fairbanks Hartwell, Surgery; William Herman, Psychiatry; Lewis Webb Hill, Pediatrics; William Augustus Hinton, Bacteriology and Immunology, and Preventive Medicine and Hygiene; Percy Rogers Howe, Pathology; Henry Jackson, Jr., Medicine; Chester Morse Jones, Medicine; Foster Standish Kellogg, Obstetrics; Charles Davison Knowlton, Laryngology; George McLean Lawson, Bacteriology and Immunology; Arthur Thornton Legg, Orthopedic Surgery; George Adams Leland, Jr., Surgery; Oscar Raoul Talon L'Esperance, Genito-Urinary Surgery; Charles Carroll Lund, Surgery; Charles Anthony McDonald, Neurology; Charles Fremont McKhann, Pediatrics; Donald John MacPherson, Neuropathology; Tracy Burr Mallory, Pathology; Nathaniel Robert Mason, Obstetrics and Gynecology; Philip Edward Meltzer, Otology; Donald Munro, Surgery; Francis Chandler Newton, Surgery; Robert Nason Nye, Bacteriology and Immunology; Frank Roberts Ober, Orthopedic Surgery; James Patrick O'Hare, Medicine; William Richard Ohler, Medicine; Martin William Peck, Psychiatry; Frank Arthur Pemberton, Gynecology; Henry Pinkerton, Pathology; Charles Terrell Porter, Otology; Oscar Jacobus Raeder, Psychiatry; Thomas Kinsman Richards, Surgery; William Bradford Robbins, Medicine; Elliott Stirling Andrew Robinson, Bacteriology and Immunology, and Preventive Medicine and Hygiene; Jack Henry Sandground, Tropical Helminthology; Alpha Reuben Sawyer, Genito-Urinary Surgery; Monroe Jacob Schlesinger, Pathology; James Warren Sever, Orthopedic Surgery; Channing Chamberlain Simmons, Surgery; William David Smith, Medicine; Marius Nygaard Smith-Petersen, Orthopedic Surgery; Harry Caesar Solomon, Neuropathology; Robert Soutter, Orthopedic Surgery; Harold Coe Stuart, Pediatrics; Loring Tiffany Swaim, Orthopedic Surgery; Philip Haskell Sylvester, Pediatrics; Max Theiler, Tropical Medicine; Douglas Armour Thom, Psychiatry; James Rockwell Torbert, Obstetrics; Henry Rouse Viets, Neurology; John Herbert Waite, Ophthalmology; Harold Lorraine Weatherford, Anatomy; Soma Weiss, Medicine; Frederic Lyman Wells, Experimental Psychopathology; Paul Dudley White, Medicine; Wyman Whittemore, Surgery; Philip Duncan Wilson, Orthopedic Surgery; Edwin Theodore Wyman, Pediatrics.

Assistants—Gordon Douglas Atkinson, in Genito-Urinary Surgery; Harold Woods Baker, Gynecology; Clarence Edward Bird, Surgery; Edward Mervin Bridge, Pediatrics; Delos Judson Bristol, Jr., Obstetrics; Randolph Kunhardt Byers, Pediatrics; George Colket Caner, Neurology; Paul Austin Chandler, Ophthalmology; Joseph Powitzer Cohen, Gynecology; Archibald Barklie Coulter, Medicine; Robert Dudley Curtis, Pediatrics; Charles Orrin Day, Otology; Richard Dresser, Roentgenology; Edwin Blakeslee Dunphy, Ophthalmology; Harold Burney Eaton, Neurology; Richard Spelman Eustis, Pediatrics; Langdon Frothingham, Comparative Pathology; Robert Norton Ganz, Pediatrics; Stanton Garfield, Pediatrics; Henry Warren George, Pharmacology; Thomas Rodman Goethals, Obstetrics; Frederick Leo Good, Gynecology; Robert Lincoln Goodale, Laryngology; Edwin Baker Goodall, Ophthalmology; Edward Scott Goodwin, Pediatrics; Roger Colgate Graves, Genito-Urinary Surgery; Arthur Moses Greenwood, Dermatology; George Martin Guest, Pediatrics; Paul Gustafson, Obsetrics; Frank Andrew Hamilton, Anatomy; Torr Wagner Harmer, Surgery; Edwin Parker Hayden, Surgery; Edwards Woodbridge Herman, Laryngology; Albert Aurelius Hornor, Tropical Medicine; Lyman Howard Hoyt, Medicine; Norman McLeod Hunter, Laryngology; Harold Valmore Hyde, Anatomy and Gynecology; Delbert Linscott Jackson, Obstetrics; Benjamin Franklin Jones, Physiology; Edward Winslow Karcher, Syphilology; Charles Hazard Kimberly, Psychiatry; James Caleb Kirby, Laryngology; Clement Ireneus Krantz, Medicine; Clarence Guy Lane, Dermatology; Eliot Horton Luther, Pediatrics; Henry Lyman, Biological Chemistry; Frederick James Lynch, Gynecology; Arthur Bates Lyon, Pediatrics; Reginald Dimock Margeson, Anatomy and Gynecology; Robert Thornhill Monroe, Medicine; Prodromos Nicholas Papas, Genito-Urinary Surgery; George Calvin Prather, Anatomy; Tracy Jackson Putnam, Surgery; Hugo Bruno Carl Riemer, Ophthalmology; John Rock, Obstetrics and Gynecology; William Alexander Rogers, Surgery; Eli Charles Romberg, Pediatrics; Benjamin Sachs, Ophthalmology; William Martindale Shedden, Anatomy; Edward Bernard Sheehan, Gynecology; Amzi Bedell Shoemaker, Genito-Urinary Surgery; Warren Richards Sisson, Pediatrics; Abraham Solomon Small, Pediatrics; Judson Arthur Smith, Obstetrics; Duncan Campbell Smyth, Laryngology and Otology; Horace Kennedy Sowles, Surgery; Harvey Spencer, Pediatrics; James Leavitt Stoddard, Medicine; Lee Edward Sutton, Pediatrics; John Baker Swift, Jr., Obstetrics; Grantley Walder Taylor, Surgery; Joseph Vincent Taylor, Obstetrics; Richard Carlisle Tefft, Jr., Pediatrics; William Tecumseh Sherman Thorndike, Obstetrics; Harold Grant Tobey, Laryngology; Richard Goodwin Wadsworth, Gynecology; Sidney Hertz Weiner, Pediatrics; Theodore Stanley Wilder, Pediatrics; William Irving Wiggin, Laryngology; John Thomas Williams, Gynecology; Harold George Wolff, Neuropathology;

George Henry Wright, Laryngology; William Bartholomew Young, Obstetrics.

Alumni Instructor—Samuel Albert Levine, in Medicine.

Alumni Assistants—Saul Berman, in Obstetrics; William Bosworth Castle, Medicine; Gerald Norton Hoeffel, Pediatrics.

Austin Teaching Fellows—Joseph Scarborough DeFrates, in Biological Chemistry; Edward Grafton McGavran, Comparative Pathology; Gale Edward Wilson, Histology.

Research Fellows—Theodore George Harwood Drake, in Pediatrics; Henry Stone Forbes, Neuropathology; Richard Bruce King, Medicine; William Gordon Lennox, Neuropathology; Wilfred Lawrence McKenzie, Child Hygiene; Donald Macomber, Obstetrics; Yellapragada Subba Row, Biological Chemistry; William Thomas Salter, Medicine; George Van Siclen Smith, Gynecology; Willard Owen Thompson, Medicine.

Teaching Fellows—Perry Cossart Baird, Jr., in Physiology; Cecil Crafts Cole, Anatomy; John Clendenin Eckels, Jr., Histology; Magnus Ingstrup Gregersen, Physiology; John Grove Kuhns, Orthopedic Surgery; John Verner Leech, Histology; Valy Menkin, Physiology; Clarence Allison Morrell, Biological Chemistry; Gordon Clark Ring, Physiology; Embree Rector Rose, Biological Chemistry; Elroy Franklin Sheldon, Histology; Kenneth Wade Thompson, Pharmacology.

Chester Morse Jones, Henry Pickering Walcott Fellow in Clinical Medicine.

Roy Graham Hoskins, Research Associate in Physiology.

Percy Allen Leddy, Edward Hickling Bradford Fellow in Medicine.

Appointment from July 1, 1927, to January 1, 1928: Theodore Warford Weller, Teaching Fellow in Obstetrics.

Appointment from April 1, 1927, to September 1, 1928: Paul Frederick Doege, Assistant in Pathology.

ANTHRAX, CONTRACTED IN HANDLING HIDES, FATAL TO STEVEDORE

A fatal case of anthrax, contracted from a shipment of hides from China, was contracted by a stevedore working along the Brooklyn, N. Y., waterfront, according to a report received at the United States Public Health Service from the New York City Department of Health, and made public May 24.

The death occurred on January 7, and first was ascribed to an infected shaving brush, the report said. Examination of the shaving brush showed it to be free from anthrax spores and the bacilli was traced to the shipment of hides.

The patient noticed, on December 31, 1926, a pimple over his right lower jaw. He cut this pimple while shaving on January 1, 1927. A hard lump at once began to form, while the sore rapidly became a dime-sized ulcer from which a bloody serum began to ooze. His face and neck and upper chest began to swell. On January 3 he went to a hospital. By that time the swelling was extreme, extending from the forehead to below the clavicle. The tissues of the neck were pushed out level with the face. A diagnosis of anthrax was made and serum was injected locally, intravenously.

Dr. Somerset states:

"Formerly, when we regularly had 20 or more cases of anthrax yearly, the shaving brush was frequently a carrier of anthrax spores. Now that the Department of Health has eliminated the shaving brush as a spore carrier, the search for the source of contagion leads further afield. Circumstances, both of time and of location of lesion, looked bad for the shaving brush in this case, but it was found to be free from infection.

"The cargo on which the patient was working came from China and consisted of the skins, hides, hair, wool and bristles of several herbivorous animals. These articles had, in the meantime, been delivered to their various destinations. They were traced, samples taken, and anthrax spores found."—*United States Daily.*

TOURIST CAMP LEGISLATION IN NEW HAMPSHIRE DEFEATED

It has been said that the Legislature of 1927, now passed into history, did not take very kindly to measures which would effect reforms or regulate businesses. Such at least proved to have been true as to a number of proposals recommended by the State Board of Health and based upon its observations and experience concerning situations involved and the needs which it conceived as being indicated.

For some time it has been only too apparent to this department that the situation with respect to tourist camps, the number of which is growing by leaps and bounds, presents some distinctly unsatisfactory aspects—ones which reflect no credit either upon the Board (which necessarily is called upon to bear the onus in the first instance), or upon the State at large—and that for the proper and effective handling of this situation legislation is called for.

In this respect a distinction is to be made between the so-called roadside refreshment stands, for which the sanitary food law provides a sufficient regulatory basis, and the tourist camps proper, to which there is applicable no existent statute, if we except the provision relating to nuisances, which is far from serving the purpose in actual practice. Also, experience teaches that local regulation, involved under the general nuisance provision, and as advocated by some as being sufficient in this case, would actually be quite inadequate to properly cope with the situation here involved.

New Hampshire was the first State to enact a juvenile camp licensing law—a law which is working out so admirably that it is now being widely copied elsewhere. So beneficial has this law proved and so extensively has its operation been commended by those concerned, it was but natural to seek to extend this principle so as to apply to this other type of camp. There is no question with enforcement authorities that this is the logical and best method to pursue, and that it is working out well elsewhere is suggested by the fact that a number of States have this year so provided.

The bill in question, which seemed to be suitable and which gave the Board no revenue from licenses or contemplated any substantial additional inspectional facilities (one thousand dollars more was asked for in the budget for general sanitary inspections), was favorably reported but was denounced in session by its opponents as an evidence of an attempt to create a "bureaucracy" and a scheme to "provide jobs for a lot of snoopers." That this view of the matter, although apparently accepted by the Legislature, is not generally held by those who are in touch with the situation and familiar with what is involved, is evidenced by numerous letters and statements received by the Board and its representatives, as well as by a number of editorial utterances. The following forceful expression is from the *Nashua Telegraph:*

"Some legislative assemblies are noted for the wise and just statutes which they pass. Others are no less widely known for the mistakes they make. To date the present New Hampshire Legislature has acted expeditiously and wisely on a number of measures. It has made a mistake upon one. When the House bill killer swung his snickersnee upon the measure for inspection of the automobile camps of the State he broke into the error column with one big mark, and a mark which ought to be erased before the session ends.

"This measure had been reported unanimously by the Public Health Committee. It provided simply that tourists' camps — clearly defining such camps and not confusing them with a wayside farmhouse—should be licensed by the State at a nominal fee, and under this license should be subjected to inspection by the State Board of Health as to its sanitary conditions. Heavens knows there is need of such inspection, all the way from a greasy mechanic or stable boy pumping gas with one hand and serving hot dogs or ice cream cones with the other, to actual, dangerous water supply pollution, or sewage disposal, if any.

"Public sentiment is not satisfied at all with what it hears about certain tourist camps in New Hampshire. It is not satisfied at all that the House used its best judgment in declining to bring these camps within some sphere of supervision. It expects that some way will be fonud to keep the New Hampshire highway camps somewhere near sanitary and decent, even at the risk of appearing just a wee bit moral.

"As the matter stands now, the tourist camp owner in rural New Hampshire and his help may be just as dirty as they please."—*Bulletin of the New Hampshire State Board of Health.*

ST. LOUIS AN IMPORTANT CENTER FOR STUDY OF CANCER

St. Louis, long an important center for the study of cancer, will now take rank among the foremost cities of the world in the subject of cancer research. This is made possible by a gift to Washington University School of Medicine of $1,000,000 for a radiological institute to be known as the Mallinckrodt Radiological Institute. The donors are the General Education Board and members of the Mallinckrodt family, chemical manufacturers of St. Louis

It is believed that the establishment of the Mallinckrodt Radiological Institute will lead to a consolidation of the Barnard Free Skin and Cancer Hospital with Washington University. This hospital, with an endowment of approximately $500,000, the gift of the late George D. Barnard, materially added to each year by his widow, is one of the unique institutions in the world. The service is entirely free and patients suffering from cancer not only get hospital care but also have the services of some of the most prominent physicians in the city without charge.

While the greatest opportunity the institute will have will be the study of cancer, particularly its causes, prevention and cure, its work will include also the study of the diagnostic and therapeutic uses of X-rays and of those new artificial rays of greater power than the X-ray, whose curative qualities as yet have not been defined.—*Campaign Notes of the American Society for the Control of Cancer.*

POISONS AND HARMFUL DRUGS FOUND IN SOME COSMETICS

The dangerous character of wood alcohol is so well established that it would appear almost incredible that anyone would dare offer a preparation containing wood alcohol for use on the human body. Wood alcohol is, however, but one of the many poisonous drugs that have been found in so-called cosmetics.

Of the potent drugs of a possible harmful nature that are used in so-called hair restoratives, there are lead acetate, silver nitrate, para phenylene diamine and resorcin. The beauty washes and face enamels contain an even more impressive array of dangerously potent drugs including flake white or lead carbonate, lead plaster, corrosive sublimate or mercuric chloride, calomel, white precipitate or ammoniated mercury, pearl white or bismuth subnitrate, zinc white or zinc oxide, Chinese or commercial zinc oxide and zinc soap.

Flake white is the ordinary white lead of commerce. It is also known as body white, silver white, Dutch white, French white, London white, Roman white and China white. It is generally recognized as the common cause of industrial lead poisoning.

It appears strange, therefore, that many of these substances are offered and are widely sold as cosmetics with the claim that the preparations containing them are absolutely harmless. The salts of heavy metals are easily absorbed and their toxic properties when so absorbed have been known for many years.

It has also been observed that females are more susceptible to the action of metallic poisons than are males.—*United States Daily.*

INCREASED FUNDS URGED FOR PUBLIC HEALTH SERVICE

That recommendation will be made to Congress for increase of the permanent relief fund of the Public Health Service to $1,250,000 was indicated, May 21, in an oral statement by the Director of the Budget, Herbert M. Lord.

The statement was made to a committee of the conference of Federal and State health officers who conferred with Mr. Lord.

Under the terms of the present appropriation, the fund amounts to $500,000, available for suppression of only specific diseases in the epidemic stage. The health conference agreed unanimously that the Health Service should have at its disposal a fund of such proportions as would permit it actively to care for public health rehabilitation after disasters.

A resolution was adopted requesting the setting up of the reserve fund, and presented to Mr. Lord. According to an oral statement by Dr. S. W. Welch, State health officer of Alabama, chairman of the special committee, Mr. Lord informed the committee that it would be possible to release the present fund for the flood relief work, and also to use the fund which would be made available next year, after July 1, 1927.

"He expressed a broader view of the protection of disease than at present accorded by law," Dr. Welch said. He added that General Lord said "he wished to broaden the law, in order that the Public Health Service might have the means to do things properly in the protection of public health, and would recommend to Congress a $1,000,000 or $1,125,000 fund to meet contingencies such as the Mississippi flood."—*United States Daily.*

INCREASE REPORTED IN THE PREVALENCE OF SCARLET FEVER, SMALLPOX, TYPHOID AND DIPHTHERIA

The number of cases of scarlet fever reported in the United States for the week ended May 7, 1927, was nearly 900 in excess of those reported for the corresponding week of last year, the United States Public Health Service announced on May 26.

Reports from 39 States disclosed the incidence of 4,773 cases of scarlet fever for the week surveyed, whereas for the corresponding week of 1926 they reported 3,912 cases. A total of 2,140 cases for the 1926 week were reported by 101 cities in all parts of the country, having an estimated aggregate population of more than 30,900,000. These cities reported 1,714 cases for the week ended May 8, 1926. The estimated expectancy of these cities, based on the experience of the last nine years, exclusive of epidemics, was 1,154 cases.

Diphtheria, typhoid fever and smallpox prevalence showed moderate increases as compared with last year.—*United States Daily.*

NOTICES

Dr. Joseph Colt Bloodgood whose name is familiar to every medical man comes to Lynn and Boston on June 16th in courteous recognition of the State-wide campaign for cancer control.

In Lynn the local medical fraternity is entertaining Dr. Bloodgood at dinner while a public luncheon meeting has been arranged by the Council of Service Clubs.

In Boston on the same day Dr. Bloodgood speaks at a public meeting at the Pilgrim Hall, 14 Beacon Street at 4 P. M.

RECONSTRUCTION CLINIC

Monthly clinical meetings by the Physical Therapeutic Department of the Reconstruction Clinic will be discontinued for the summer months and will be resumed again in September. Date to be announced.

FIRST MENTAL HYGIENE CONGRESS WILL MEET IN WASHINGTON

The world's first International Congress on Mental Hygiene will meet in Washington in April, 1929, according to Clifford W. Beers of New York, General Secretary of the National Committee on Mental Hygiene. Mr. Beers was United States delegate at a meeting of this Committee recently held in Paris. It was voted that headquarters be established in the United States in order that he might be able to continue as Secretary of the National Committee.

AN INVITATION TO THE OPENING EXERCISES OF THE PONDVILLE HOSPITAL AT NORFOLK

The Commonwealth of Massachusetts, the Department of Public Health, requests the honor of your company at the opening on Tuesday, June twenty-first, of the Pondville Hospital, at Norfolk, Massachusetts, for the care of patients suffering from cancer.

His Excellency Governor Alvan T. Fuller will speak at eleven o'clock. Buffet lunch will be served from one to two o'clock. The institution will be open for inspection all day.

Special bus service. Leaves Copley Square at 9:30 A. M., returns at 3:30 P. M. to arrive in Boston about 5:00 P. M. The hospital is on the Boston-Providence turnpike between Walpole and Wrentham.

PROGRAM

(Eleven to Twelve-Thirty O'Clock)

Opening Address. Alvan T. Fuller, Governor of the Commonwealth of Massachusetts.

Cancer and the Medical Profession. President of the Massachusetts Medical Society.

Cancer and the Public. Robert W. Kelso, Chairman, Advisory Cancer Education Committee, Massachusetts Department of Public Health.

National Aspects of the Cancer Problem. George A. Soper, Ph.D., Managing Director, American Society for the Control of Cancer.

The Cancer Clinics. William T. Hopkins, M.D., Chairman, Cancer Committee, Lynn Medical Fraternity.

Cancer and Poverty. John H. Nichols, M.D., Superintendent, State Infirmary, Tewksbury.

Service at the Pondville Hospital at Norfolk. Robert B. Greenough, M.D., Chief, Consulting Staff, Pondville Hospital at Norfolk.

Note. This invitation has been sent to most of the physicians of Massachusetts.

UNITED STATES PUBLIC HEALTH SERVICE

Chronological List of Changes of Duties and Stations of Commissioned and Other Officers of the United States Public Health Service

May 11, 1927

Surgeon Lawrence Kolb—Directed to proceed from Washington, D. C., to Baltimore, Md., May 7, and return, in connection with the examination of candidates for entrance into the Service—May 3. 1927.

Surgeon F. A. Carmelia—Directed to proceed from Washington, D. C., to Baltimore, Md., and return, to inspect a tug--May 4, 1927.

Assistant Dental Surgeon (R) F. W. Harper—Relieved from duty in Washington, D. C., and assigned to duty with the United States Coast Guard—May 4, 1927.

Junior Pharmacist Perry Land—Directed to proceed from Seattle, Wash., to San Francisco, Calif., for assignment to duty at U. S. M. H. No. 19—May 5, 1927.

Assistant Surgeon General F. C. Smith—Detailed to represent the Service at the meeting of the American Conference on Hospital Service to be held in Washington, D. C., May 20—May 7, 1927.

Senior Surgeon C. H. Lavinder—Directed to proceed from New York City to Palisades Park, N. Y., May 17, and return for work in connection with the prevention of the interstate spread of disease—May 7, 1927.

Surgeon G. L. Collins—Detailed to represent the Service at the meeting of the American Conference on Hospital Service to be held in Washington, D. C., May 20—May 7, 1927.

Surgeon G. C. Lake — Directed to proceed from Washington, D. C., to Baltimore, Catonsville, Westminster and other places in Maryland, May 7, and return, to investigate suspected cases of malta fever —May 7, 1927.

Sanitary Engineer Leslie C. Frank--Directed to proceed from Montgomery, Ala., to Chicago, Ill., May 8, and return, in connection with pasteurization research studies being carried on by the Service—May 7, 1927.

Surgeon Emil Krulish—Directed to proceed from Minneapolis, Minn., to St. Paul, Minn., and return, to investigate a claim against the United States Employees' Compensation Commission—May 9, 1927.

BOARDS CONVENED

A board of officers convened to meet at Philadelphia, Pa., at the call of the chairman, for the purpose of reëxamining an alien—May 6, 1927. Detail for the board: Surgeon H. E. Trimble, A. A. Surgeon Leon Van Horn, A. A. Surgeon Horace Phillips.

Official:

H. S. Cumming, *Surgeon General.*

Chronological List of Changes of Duties and Stations of Commissioned and Other Officers of the United States Public Health Service

May 18, 1927

Surgeon K. E. Miller—Directed to proceed from New Orleans, La., to Providence, La., and return, in connection with flood conditions in Louisiana—May 2, 1927.

Sanitary Engineer Leslie C. Frank—Directed to proceed from Montgomery, Ala., to Chicago, Ill., May 8, 1927, and return, in connection with pasteurization research studies—May 7, 1927.

Surgeon C. L. Williams—Directed to proceed from Rosebank, S. I., N. Y., to Providence, R. I., and return, for temporary duty—May 9, 1927.

Pathologist William Charles White—Upon completion of detail at Indianapolis, Ind., directed to proceed to Ottawa and Montreal, Canada, in connection with field investigations of tuberculosis, returning to station at Washington, D. C., upon completion of such investigations—May 11, 1927.

Sanitary Engineer H. W. Streeter—Directed to proceed from Cincinnati, Ohio, to Covington, Ky., and return, to investigate the water supply at that place —May 11, 1927.

Passed Assistant Surgeon Kenneth F. Maxcy—Directed to proceed from Washington, D. C., to Baltimore, Md., May 12, and return, to represent the Service at a conference on epidemiology—May 11, 1927.

Statistician Edgar Sydenstricker—Directed to proceed from Washington, D. C., to Baltimore, Md., May 12, and return, to represent the Service at a conference on epidemiology—May 11, 1927.

Surgeon L. R. Thompson—Directed to proceed from Washington, D. C., to Baltimore, Md., as may be necessary during the week of May 16, and return, in connection with field investigations of industrial hygiene. Also directed to proceed from Washington, D. C., to Harrisburg, Pa., June 14, and return, to attend a conference on industrial nursing—May 13, 1927.

Surgeon H. F. White—Directed to proceed from Curtis Bay, Baltimore, Md., to Lewes, Del., and return, to inspect quarantine equipment at the Delaware Breakwater Quarantine Station—May 13, 1927.

Assistant Surgeon General F. C. Smith—Detailed to represent the Service on the Federal Liquidation Board—May 14, 1927.

Surgeon Robert Olesen—Directed to proceed from Cincinnati, Ohio, to West Baden, Ind., and return, to attend a meeting of the National Eclectic Medical Association to be held June 21-24—May 14, 1927.

Assistant Surgeon General C. C. Pierce—Detailed to represent the Service at the meeting of the American Physiotherapy Association to be held in Washington, D. C., May 16—May 16, 1927.

Senior Surgeon C. H. Lavinder—Bureau orders of May 7, directing him to make a sanitary survey of Palisades Park, N. Y., revoked—May 16, 1927.

Surgeon Charles Armstrong—Detailed to represent the Service at the meeting of the American Associations of Medical Milk Commissions to be held in Washington, D. C., May 16-17—May 16, 1927.

Surgeon L. L. Lumsden—Directed to proceed from Washington, D. C., to Memphis, Tenn., and such other places in the flood area as may be necessary, and return, for duty in connection with the prevention of the interstate spread of epidemic diseases—May 16, 1927.

Surgeon A. J. McLaughlin — Directed to proceed from St. Louis, Mo., to Memphis, Tenn., and such other places in the flood area as may be necessary, and return, for duty in connection with the prevention of the interstate spread of epidemic diseases—May 16, 1927.

Chief Pharmacist B. E. Holsendorf—Bureau orders of April 23, 1927, amended so as to direct him, before returning to station at Rosebank, S. I., N. Y., from Newport News, Va., to proceed to Washington, D. C., for conference at the Bureau—May 16, 1927.

Surgeon Lawrence Kolb—Directed to proceed from Washington, D. C., to Cincinnati, Ohio, and return, to attend a meeting of the American Psychiatric Association to be held May 31 to June 3—May 17, 1927.

BOARDS CONVENED

A board of officers convened to meet at Philadelphia, Pa., at the call of the chairman, for the purpose of reëxamining an alien—May 7, 1927. Detail for the board: Surgeon H. E. Trimble, A. A. Surgeon Leon Van Horn, A. A. Surgeon Horace Phillips.

A board of officers convened to meet at Washington, D. C., May 23, to determine the physical eligibility for promotion of certain officers of the United States Coast Guard—May 16, 1927. Detail for the board: Surgeon G. L. Collins, Surgeon Charles Armstrong.

H. S. Cumming, *Surgeon General.*

Chronological List of Changes of Duties and Stations of Commissioned and Other Officers of the United States Public Health Service

May 25, 1927

Assistant Surgeon General (P.) William S. Terriberry—Directed to proceed from New York City to Palisades Park, N. Y., May 17, and return for the purpose of making a sanitary survey of the park—May 16, 1927.

Surgeon L. L. Williams, Jr.—Directed to proceed from Richmond, Va., to Bristol, Pa., May 18, and return, in connection with field investigations of malaria, stopping en route at Washington, D. C., for conference at the Bureau—May 17, 1927.

Surgeon M. F. Haralson—Directed to proceed from Port Arthur, Texas, to New Orleans, La., and such other places in the flood area as may be necessary, and return, for duty in connection with the prevention of the interstate spread of epidemic diseases—May 20, 1927.

Pathologist William Charles White—Upon completion of duties at Indianapolis, and before returning to station at Washington, D. C., directed to proceed to Ottawa and Montreal, Canada, and New Haven, Conn., in connection with field investigations of tuberculosis—May 21, 1927.

Senior Sanitary Engineer J. A. Leprince—Directed to proceed from Memphis, Tenn., to such places in the States of Tennessee, Kentucky, Missouri, Mississippi, Arkansas and Louisiana as may be necessary, and return, in connection with the prevention of the interstate spread of epidemic diseases in the flooded area—May 21, 1927.

Sanitary Engineer L. C. Frank—Directed to proceed from Montgomery, Ala., to Saratoga Springs, N. Y., and return, to attend the annual State Conference of Health Officers and Public Health Nurses to be held June 28-30—May 21, 1927.

Acting Assistant Surgeon Roy R. Jones—Directed to proceed from Washington, D. C., to Johnstown, Pa., and return, in connection with dust studies—May 21, 1927.

Acting Assistant Surgeon Daisy M. O. Robinson—Directed to proceed from Washington, D. C., May 22, to Kingston and such other places in the State of

New York as may be necessary, and return, in connection with coöperative venereal disease control activities—May 21, 1927.

Surgeon Paul D. Mossman—Directed to proceed June 1, from Rolla, Mo., to Grand Forks, Devils Lake and such other places in the State of North Dakota as may be necessary, and return, in connection with trachoma studies—May 24, 1927.

Passed Assistant Surgeon Kenneth F. Maxcy—Directed to proceed from Washington, D. C., to New Orleans, La., and return, in connection with field investigations of typhus fever—May 24, 1927.

CASUALTY

It is with regret that the Bureau announces the death of Senior Surgeon Henry Smith Mathewson, on duty at Providence, R. I., on May 8, 1927. Doctor Mathewson was appointed as Assistant Surgeon in the Regular Corps to rank from April 7, 1896; promoted to the grade of Passed Assistant Surgeon December 14, 1901; to the grade of Surgeon February 2, 1912, and to the grade of Senior Surgeon May 1, 1924.

H. S. Cumming, *Surgeon General.*

List of Changes of Duties and Stations of Commissioned and Other Officers of the United States Public Health Service

Surgeon L. L. Lumsden—Directed to proceed from Washington, D. C., to Memphis, Tenn., May 21, and to such other places in the flooded area as may be necessary, and return, to coöperate with State and local health authorities in the prevention of the interstate spread of epidemic diseases—May 19, 1927.

Surgeon K. E. Miller—Directed to proceed from New Orleans, La., to Memphis, Tenn., May 24, and return, for conference relative to the prevention of epidemic diseases in the flooded area—May 21, 1927.

Assistant Surgeon E. R. Coffey—Directed to proceed from Jefferson City, Mo., to Memphis, Tenn., May 25, and return, for conference relative to the prevention of epidemic diseases in the flooded area—May 21, 1927.

A. A. Surgeon A. S. Irving—Directed to proceed from New Orleans, La., to such places in the flooded area as may be necessary, and return, to coöperate with State and local health authorities in the prevention of the interstate spread of epidemic diseases—May 24, 1927.

A. A. Surgeon G. M. Kunkel—Directed to proceed from New Orleans, La., to such places in the flooded area as may be necessary, and return, to coöperate with State and local health authorities in the prevention of the interstate spread of epidemic diseases—May 24, 1927.

Surgeon L. R. Thompson—Directed to proceed from Washington, D. C., to Boston, Mass., and return, to attend the meeting of the Medical Section of the National Research Council to be held in that city May 27—May 25, 1927.

Associate Sanitary Engineer A. P. Miller—Directed to proceed on May 30 from Washington, D. C., to Chicago, Ill., Milwaukee, Wis., Detroit, Mich., and Cleveland, Ohio, and return, to investigate certain conditions pertaining to the application of the interstate quarantine regulations with respect to vessels operating on the Great Lakes—May 25, 1927.

Assistant Surgeon A. S. Rumreich—Directed to proceed June 1, from Rolla, Mo., to Devil's Lake, N. D., and to such other places in the State of North Dakota as may be necessary, and return, in connection with trachoma studies—May 26, 1927.

Assistant Surgeon General Thomas Parran, Jr.—Directed to proceed May 30, from Washington, D. C., to Chicago and Springfield, Ill., and return, in connection with venereal disease control measures—May 27, 1927.

Assistant Surgeon General F. C. Smith—Directed to proceed May 28 from Washington, D. C., to New York City, and return, to confer with the medical officers in charge of the marine hospitals in that city—May 27, 1927.

Surgeon Peter J. Gorman—Relieved from duty at Ellis Island, N. Y., and directed to proceed to Nogales, Ariz., and assume charge of Service activities at that place, stopping at El Paso, Texas, en route, for temporary duty for a period not to exceed three weeks—May 27, 1927.

Chief Pharmacist B. E. Holsendorf—In returning to station at New York from Washington, D. C., in accordance with Bureau orders of May 16, directed to stop at Philadelphia, Pa., May 21, for conference relative to methods of ratproofing ships—May 27, 1927.

Sanitary Engineer H. W. Streeter—Directed to proceed from Springfield, Ill., to Decatur, Ill., and return, to make a survey of the sewage problem at that place—May 28, 1927.

P. A. Dental Surgeon (R) A. T. Ellison—Relieved from duty at Norfolk, Va., and directed to proceed to United States Coast Guard Section Base One, Atlantic City, N. J., and report by wire to the Commandant, United States Coast Guard, for assignment to duty—May 28, 1927.

Associate Statistician Rollo H. Britten—Directed to proceed from Washington, D. C., to Greenville, S. C., and return, in connection with field investigations of industrial hygiene—May 28, 1927.

Surgeon Joseph Goldberger—Directed to proceed from Washington, D. C., June 1, to Milledgeville, Ga., thence to Dallas, Texas, and return, in connection with pellagra studies—May 31, 1927.

Surgeon M. H. Neill—Relieved from duty at Honolulu, T. H., and assigned to duty at U. S. M. H. No. 19, San Francisco, Calif.—May 31, 1927.

Special Consultant Walter M. Brunet—Directed to proceed from New York City, June 1, to Cleveland, Ohio, Madison, Wis., Portland, Ore., and to such other places in the State of Oregon as may be necessary, and return, in connection with studies of venereal disease prevalence—May 31, 1927.

C. C. Pierce, *Acting Surgeon General.*

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF UNITED STATES PUBLIC HEALTH SERVICE

Examinations of candidates for entrance into the Regular Corps of the United States Public Health Service will be held at the following named places on the dates specified:

At Washington, D. C.	August 8, 1927
At Chicago, Ill.	August 8, 1927
At New Orleans, La.	August 8, 1927
At San Francisco, Calif.	August 8, 1927

Candidates must be not less than 23 nor more than 32 years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, United States Public Health Service, Washington, D. C.

H. S. CUMMING, *Surgeon General.*

REPORTS AND NOTICES OF MEETINGS

AMERICAN PUBLIC HEALTH ASSOCIATION ANNUAL MEETING, CINCINNATI, OCTOBER 17-21

WHEN will the peak of heart disease mortality be reached? What can we do about measles? How about the common cold? Has Prohibition promoted the public health? Are we giving attention to the nutrition of the industrial workers? Why is conservation of sight a public health problem? Is food poisoning a material factor in shortening the life span? How far have we gone and how far are we going in public health education? What is the place of the Government in public health administration?

These and many other pertinent questions pertaining to the health of the people will be discussed at the Fifty-Sixth Annual Meeting of the American Public Health Association at Cincinnati, Ohio, October 17-21, with headquarters at Hotel Gibson.

This year the Annual Meeting will open officially at noon on Monday and close Friday noon, which gives opportunity for one more session than in previous years. The Ohio Society of Sanitarians and the Ohio Health Commissioners will hold their annual meetings in conjunction with the A. P. H. A. in Cincinnati.

Each of the nine sections of the Association—Laboratory, Health Officers, Vital Statistics, Public Health Engineering, Industrial Hygiene, Food and Drugs, Child Hygiene, Public Health Education, and Public Health Nursing—will hold individual section meetings. In some instances two or more sections will combine for joint meetings. The topic for discussion at the Forum Session is "Has Prohibition Promoted the Public Health," C.-E. A. Winslow, Dr.P.H., Yale University, presiding. One session will be given to the discussion of mental hygiene from the angle of the home, the school, and the industrial field. An analysis will be made by a special committee on the health programs in operation in normal schools and colleges and will be supplemented by constructive suggestions.

Dr. Herman N. Bundesen, health commissioner of Chicago, Dr. William H. Park, of the New York City Health Department Laboratories, Dr. Clarence E. Smith of the U. S. Public Health Service and C. W. Larson of the U. S. Department of Agriculture are among the specialists asked to give the most recent developments in the sanitary production and handling of milk.

Several luncheon and dinner meetings will be held by sections including Laboratory, Public Health Engineering, Industrial Hygiene, Food and Drugs, and Public Health Education. Besides a special session on venereal disease control, a round table luncheon conference has been scheduled.

Trips to points of interest in and around Cincinnati have been arranged by the local committee. An attractive program for the entertainment of the women guests and delegates at the Annual Meeting has been provided by the Cincinnati Committee.

Railroads will grant the usual reduced rates to members and Fellows of the Association going to Cincinnati for the meeting. Transportation certificates will be mailed to members of the American Public Health Association, September first. Application for reduced fare certificates and for information should be made to Homer N. Calver, Executive Secretary, American Public Health Association, 370 Seventh Avenue, New York City.

A preliminary program of the Fifty-sixth Annual Meeting will be mailed about August 1.

BOOK REVIEWS

The Evolution of Tubercle. By ALLEN K. KRAUSE, M.D. Journal of the Outdoor Life, New York—Pub. Price, $1.

The text of this short book of less than 100 pages was prepared as an address given by Dr. Krause at the Fifth Conference of the International Union Against Tuberculosis in October, 1926. In it Dr. Krause discusses in his usual authoritative and scientific style the evolution of the tubercle from the first implantation of the tubercle bacilli. I repeat his conclusions in full here as anything coming from such an authoritative source as Dr. Krause requires careful perusal.

"The idea of therapy is, of course, a practicable bactericide. Meanwhile, as we await this, it would appear that a study of structure would suggest the following paths as worthy of exploration:

"1. That directed toward the discovery of a medium or method to accelerate and heighten cellular proliferation and fibrosis. Dangers lie in enhancing the tendency of tissues to tumor-formation.

"2. That toward a medium to neutralize the intoxicating products of the allergic reaction. If it were nonspecific, it might prove a veritable boon in many infectious diseases.

"3. That toward a medium to neutralize the poisonous products that proceed from tuberculous foci. For reasons frequently expressed, it is believed that these are not specific, but are substances that result from the death and disintegration of the cellular components of foci. Can a substance antagonistic to them be found? Or a substance that would so act upon the body as to ward off their physiological effects? To abate or control the constitutional symptoms of chronic pulmonary tuberculosis would be an enormous advance, even though the anatomical process were not directly influenced. Today we aim at the fibrous investment of tubercle, striving to strengthen it. Our methods, imperfect though they are, continually do wonders. May we not look forward to supplementing these with measures directed against the focal contents of tubercle, or, less empirically than at present, against the symptoms these engender?"

Bacteriological Atlas. By Richard Muir. pp. 134. Wm. Wood & Co., New York.

This atlas is a series of sixty excellent colored plates of the more important pathogenic microörganisms, together with a brief description of each plate.

For anyone not having a set of slides for reference, this volume is a valuable means for gaining familiarity with the various forms of bacteria and common protozoa. No attempt has been made to make an elaborate hand-book, but the book is of considerable practical value.

Dudley Allen Sargent: An Autobiography. Edited by Ledyard W. Sargent, with an introduction by R. Tait McKenzie, M.D. Lea & Febiger, Philadelphia, 1927. xvi + 221 pages.

A sketchy account of the life of a professional gymnast, who later became a physician and established a school for physical education at Harvard.

Indications for Operative Treatment in Gynecology. By Dr. Walter Benthin, Königsberg. Berlin and Vienna: Urban and Schwarzenberg. 1927.

This monograph aims to establish a rational conservative operative indication in gynecology. The first part is concerned with general considerations. The second considers specific indications in discharges, hemorrhage, dysmenorrhea, sterility, stenoses, malpositions, prolapse, peritonitis, tuberculosis, carcinoma, myoma, cysts, urinary disturbances, injuries, burns, foreign bodies, and post-operative complications. The third part presents 61 illustrative case histories. This is an interesting book with an unusual standpoint, welcome in a generation when surgical operative indictions are often unwarrantably broad and loosely drawn.

Clinical Aspects of Malignant Tumors. Edited by P. Zweifel and E. Payr. Leipzig: S. Hirzel. 1927.

This third and last volume of the editors' monumental work on the clinical aspects of malignant disease deals with tumors of the breast and of the female genito-urinary apparatus. The collaborators are Dödulim, Frankl, Guleke, Joest, Keysser, Kleinschmidt, and Wintz. There are additional chapters on radiation, on vaccine therapy, and on malignancy in animals. There are 184 text illustrations and 44 colored plates. Aside from its value as part of the series, this volume is of particular interest to the gynecologist and obstetrician.

The Ship-Surgeon's Handbook. By A. Vavasour Elder, D.S.C., M.R.C.S. (Eng.) New York: William Wood and Co., 1927.

The first edition of this well-known manual was favorably reviewed in the Journal a score of years ago. To the second edition, published in 1910, were added special chapters on ship etiquette and customs, medical logs, and the American passenger service. This third edition, retaining all previous features, contains more clinical material. Another chapter has been added on Canadian and other Dominion immigration regulations. There are comments from a British standpoint on the American immigration method, and on national prohibition. There are a dozen appendices on a variety of subjects. The book should continue to be of extreme practical value to all inexperienced surgeons who, like Tobias Smollett, are about to embark on a professional life at sea.

Diseases of the Skin. Third Edition. By Oliver S. Ormsby, M.D. Lea and Febiger, Philadelphia, 1927. 1262 pages.

The third edition of this excellent general text-book on diseases of the skin brings it up to date with the addition of considerable new and revised material.

Obviously, in a textbook that aims to cover the entire field of dermatology it is necessary to eliminate much that is either controversial or the worth of which has not been fully established. In this respect the author has been particularly conservative when writing of treatment. Under a given disease many treatments are often given without any attempt at evaluation in the light of the author's personal experience. A bit more of the personal touch in this respect would greatly help the man of limited experience in deciding what line of procedure to start with.

The use of the mercury quartz light has been almost entirely omitted and this omission seems particularly striking when no reference is made to its practically specific action in dermatitis herpetiformis, a disease which yields to nothing else. In the same way the use of corn starch in baths is not recorded although this particular bath has supplanted all others in the hands of many men because of its efficacy.

The fungus infections, which are increasing so rapidly in every walk of life, are splendidly covered by text and illustrations. A separate chapter on industrial dermatoses would be at once novel and a most useful feature.

In spite of careful editing an occasional contradiction slips by as on page 93—"tar" and several other drugs are mentioned as being "commonly disappointing in their action and they are now largely replaced by other agents"; while on page 105 appears the statement that "tar is one of the most valuable local agents used in cutaneous diseases."

Several sections have been entirely rewritten in the light of later investigations and thirty new diseases have been described. The photographic material is excellent and has been increased by the addition of seventy-six new illustrations. The book is printed in a particularly clear style of type and on excellent paper which contributes to the readability of the text and the detail of the photographs.

Principles of Human Physiology. By ERNEST H. STARLING. Fourth Edition with 570 illustrations. Philadelphia. Lea & Febiger, 1926.

As a result of extensive alterations the number of pages in the fourth edition of this well known English text-book has been reduced by 240, chiefly through the omission of elementary biochemical material. Such a standard work needs no praise and on the other hand such minor criticisms as may be offered can in no way lessen its real significance.

A brief description of insulin and its role in carbohydrate metabolism has of course been added. The many recent investigations on the physiology of the capillaries are mentioned, but the author quite wisely refrains from conclusions in a field where the evidence is as yet so contradictory. A closer correlation between the sections on the chemistry of respiration and the regulation of the circulation would seem highly desirable. As it is these sections are separated by pages devoted to such a remote subject as immunity.

The emphasis placed on the biochemistry of renal excretion largely obscures the dynamic conception of renal physiology which has been developed during the past five years. Here again a closer correlation with the physiology of the circulation would be of value to the student who is to pass on to a study of the cardio-renal complex.

The small amount of space which is available in a general text-book for the consideration of the phenomena attending fertilization and the mechanism of heredity could well lead to their complete omission as the customary brief presentation apparently for the sake of completeness is totally inadequate for such significant biological subjects. Space so obtained might be utilized advantageously for the elaboration of subjects such as the ductless glands which are more closely allied to the major topics of the book.

Epidemic Diseases of the Central Nervous System. By ARTHUR SALUSBURY MACNALTY, M.A., M.D. Faber & Gwyer, London, 1927. xiii + 194 pages.

The medical world has viewed with alarm, in the last decade, the increase in the infectious diseases of the nervous system. Epidemics of the three important ones, poliomyelitis, cerebrospinal meningitis and encephalitis lethargica, have devastated nearly all civilized communities. An exceptional opportunity, therefore, has been presented to the epidemiologist and, in England especially, public health officials have not been slow in collecting and analyzing the data. MacNalty, medical officer of the Ministry of Health (England), was a pioneer worker in the field and many of his researches were embodied in the Milroy Lectures, published in the *Lancet*, March 7, 14 and 21, 1925. These lectures have now been expanded and appear in book form as a brief, but excellent, summarization of our knowledge of the epidemiology of these three diseases.

MacNalty believes that "the increased incidence of epidemic nervous disease is associated with an increased susceptibility on the part of nervous tissue in certain individuals to these diseases" (p. 7). No answer can be given, however, at the present time, to a question of why we are more susceptible now than formerly. Many factors probably play a part, not the least of which are "nervous fatigue," the increase in methods of transportation, "epidemic cycles" and last, and perhaps most important, as all these diseases have a striking seasonal prevalence, "cosmic influences." Many other similar points of equal importance are ably discussed by the author. He concludes, in a general way, that poliomyelitis, meningitis and encephalitis are independent entities, closely related from the epidemiological point of view. Prevention is difficult, partly because of healthy carriers and partly because of our scant knowledge of the subject of susceptibility. MacNalty, therefore, suggests "that a closer study of the problem of susceptibility to infection may be an important means of acquiring success in coping with epidemic diseases of the central nervous system." (p. 179.)

The book is well illustrated with charts and carries a good working bibliography and index. It is a monograph of great importance to public health officials and neurologists, by a sound and skilled research worker, who knows how to present his facts and theories in a clear, readable style.

The Modern Practice of Pediatrics. By William Palmer Lucas, M.D., LL.D., Professor of Pediatrics, University of California Medical School; Physician in Chief, Children's Department, University of California Hospital; Consulting Physician, Baby Hospital, Oakland, California; Visiting Physician, San Francisco Hospital for children; Visiting Physician, San Francisco Hospital; Author of "The Health of the Runabout Child," "Children's Diseases for Nurses," etc. New York. The Macmillan Company, 1927.

As the author states in his preface, this book is an effort to relate the study of the diseases of childhood to the positive aspects of health, and folowing this statement of belief, he has produced, not so much an orthodox text book on the diseases of children, of which there are plenty, as an exposition of the child himself, and the points in which he differs from the adult, in health as in disease. It is truly a work on modern practice, and as the modern practice of pediatrics is so largely the practice of preventive medicine in its relation to the child, so this book presents the normal child in his growth and development and physiology, and the methods by which these are directed.

The diseases of infancy and childhood are not on this account neglected, but the space allotted to them is properly proportioned; in other words the book is well balanced according to modern conceptions of the science of pediatrics.

The Surgical Clinics of North America. February, 1927. Cancer Number. W. B. Saunders Co. Philadelphia.

This number is a Philadelphia cancer number, and all but one of the articles are written by local men.

Mr. Sampson Handley of the Middlesex Hospital, London, and Carnett of Philadelphia have written the first two articles on the mode of bone metastasis in breast cancer. As a result of careful X-ray studies of early metastases, Carnet has abandoned Handley's theory of extension via superficial fascial lymphatics in favor of the theory of permeation of cancer cells through the deep fascial lymphatics. After going over his X-ray films, Handley has accepted the new theory.

Early X-rays show involvement of the head of the humerus and the head and neck of the femur before the deltoid insertion on the humerus or the trochanter on the femur are involved. Many years ago Handley pointed out that bone metastasis from breast cancer into bones below the knee or elbow is very rare. In fact he saw his first cases in Philadelphia. Carnett has shown that these do occur but only after involvement of the bones proximal to these points. He has also shown that in some cases at least involvement of the femur has come through retrograde lymphatic permeation through the abdominal lymphatics.

In cancer of the prostate the neighboring bones, the pelvis and lumbar spine, are the first ones to show metastasis.

Carnet and Winkelman describe four types of brain lesions, all metastatic from the breast;—(1) within the substance of the brain, (2) engorgement of the cranial vessels with cancer cells, (3) attachment to the under side of the dura and (4) a solitary isolated metastatic nodule easily removed at operation.

Shamberg and Bradby report poor results in the treatment of port wine stains with radium. This is in accord with the experience of others. Better results were obtained with the raised angiomata, treated entirely by gamma radiation. The dosage for each type is named. Lymphangiomata have not done well with radium.

Shamberg repeats the old statement that skin cancer is found more commonly in people who received excessive exposure to sunlight, although recent figures on a large group of skin cancers have shown as large a proportion in women working in doors as in men in out of door occupations.

The book contains a very extensive discussion by Pendergrass of the methods of treatment of cancer of the lip by non-surgical means. The reviewer's decision on the results of such treatment is "not proven." End results are admittedly those of 64 picked cases out of 172 cases treated. Some of these have been followed for but two years. The writer excused these figures with the statement that "statistics are usually not worth the time it takes to prepare them."

Surgery of the lip has been abandoned for radium, followed immediately in some cases by electrothermic destruction. Broders' classification is recognized. Biopsies are done in every case without fear of extending the disease. Implantation of radium is not advised because of this very danger! Endothermy is done the day following the application of radium to the growth for three reasons:—(1) to get the effect of heat plus radiation, (2) because if radium alone is used, there is engorgement of the lymphatics to the neck conducive to glandular metastasis and (3) to shorten the convalescence of the patient.

The writer admits that a very noticeable scar, often keloidal in type, is produced from the combined treatment. His pictures of his cured lips are not in keeping with his statement that the cosmetic appearance is of great importance to the patient. He mentions no plastic work on these patients.

He has given up block dissections of the neck, as in his experience "these patients have been subjected to a mutilating operation with only an occasional good result." This rash statement of results differs from published results of large series of cases in many of the large hospital centers.

He gives X-ray to the glands in all cases. In some instances radium packs are also applied around the chin. If glands increase after deep X-ray therapy, and if there is a tendency for a gland to break down, local excision is done. If not breaking down he implants gold emanation tubes. Of 28 cases treated by X-ray the glands disappeared in 5. (Some of these may have been inflammatory glands). In 10 the glands were not changed and in 10 they became larger following X-ray therapy.

The reasons for continuing radiation treatment of these lesions with such poor results where other clinics are obtaining better by operative measures is not understood by the reviewer. The value of these methods is certainly not proven.

The remainder of the volume is devoted to the technique of radium and endothermy treatments.

"*Nurses and Nursing.*" By DOCTOR ALFRED WORCESTER

The book is a comparatively small one, comprised of twelve chapters, covering about one hundred and seventy pages. The first three chapters appeared in "Nurses for Our Neighbors," a previous book by the same author. Five chapters are of an historical nature. They tell the story of Florence Nightingale, Angelique Pringle, Baroness Von Olnhausen, the Training School at the New England Hospital for Women and Children, and the Waltham Training School. To many, the most interesting chapter is that which tells of the author's meeting the medical profession of Ottawa and Toronto in an effort to convince those men that the organization now known as "The Victorian Order of Canadian Nurses" would serve both the medical profession and the community. The chapter, "Nursing Problems" is a paper read before the Massachusetts Medical Society in 1925. The chapter, "Helping the Helpless," is of the nature of an autobiography which relates to the author's experiences at the Boston Lying-In Hospital, and as a young physician. The book closes with an address given at the services held under the auspices of St. Barnabas' Guild on May 12, 1924. This little book is a delightful one, and is a real addition to a nurse's library.

Self-Care For The Diabetic. By J. J. CONYBEARE.

A concise, elementary description of diabetes, its cause and treatment. It is written primarily for the patient, with the one idea of instructing him how to control his disease. Essential data and instructions are given and the limits beyond which he should not go without medical advice are clearly stated. Useful tables of food values and illustrative diets are included. Every diabetic, regardless of his previous training, would profit greatly by reading this little sixty-eight page booklet which is published by the Oxford University Press.

The Enlarged Prostate. By KENNETH M. WALKER, F.R.C.S., M.A., M.B., B.S. Published by Humphrey Milford, Oxford University Press, London. 193 pages.

Kenneth Walker has given us a most admirable little treatise on "The Enlarged Prostate." A better title would have been the Obstructing Prostate, for somewhat paradoxically, a portion of his book deals with Prostatism without enlargement. Walker considers the anatomy, physiology and pathology of the prostate, the results of obstruction, and the methods of dealing with the various types. The suprapubic and perineal approaches are compared in a very just and broad minded way; the chapter on anesthesia is admirable.

Walker has apparently been a pioneer in England in the treatment of median bar obstructions by intraurethral methods. He employs a prostatic punch, but reverses the usual process in that he first destroys the obstruction by electrocoagulation, and then removes the slough with the punch.

Although some of Walker's ideas are at variance with those held by most American Urologists, or perhaps because of this fact, his book is interesting. It shows in every page that the writer is an experienced urological surgeon, and that his conclusions are the results of experience rather than of theory.

Mineral Waters of the United States and American Spas. By **William Edward Fitch, M.D.**, Member of the International Society of Medical Hydrology, etc., etc. Illustrated. Published by Lea & Febiger, Philadelphia and New York, 1927.

A well printed book of 800 pages. The paper, print, binding and bookmaking generally, are excellent. The book opens easily and stays open. The paper is not shining and glittering, but soft and pleasant to look at. The illustrations are good and sufficient.

The volume is dedicated to Ernest Ellsworth Smith, M.D., Ph.D., Pres. Acad. of Science, New York, N. Y., of whom many pleasant things are said.

The book is divided into an introduction, four parts, in all 15 chapters, an extensive bibliography, an exhaustive index and a short and important preface.

Quotation from Preface: "The object of this work is to awaken the (United States) profession to a realization of the importance of our American Mineral Water resources, their great therapeutic value in the treatment of Chronic Disease, and to encourage a more thorough understanding of the subject of Medical Hydrology." A most praiseworthy object and one which the author has worthily achieved.

This work is timely and sorely needed. It is probable that the doctors of the United States, well educated in most branches of the Art and Practice of Medicine, know less about Balneotherapy, than the doctors of any other civilized country. Not only do they know less, but up to the present, and in spite of such men as Baruch, Putnam and other isolated but admirable authorities, authors and teachers, the profession as a whole in the United States does not seem to care to take mineral waters, and scientific bathing in the wide sense of the word, at all seriously. This is to be regretted and it must be changed for the better. The paragraph on page 21, anent European versus American Spas, is perhaps a trifle severe.

In a future edition it is to be hoped that the author, in a brief and well illustrated appendix, will describe perhaps a score of the great watering places of England and Europe, putting, I trust, Vichy where it deserves to be—first and best of all. After all, there is something in Vichy, Aix, Carlsbad, Marienbad, Bath, etc., etc., etc.—something possibly indefinable, but which has collected and augmented itself for two or three thousand years, and which does, to many Americans, lend a certain charm and potency, which in the nature of things, cannot yet be found in the United States. The reviewer was amazed to learn, as perhaps others will be, that there are more than 1300 springs in the United States, as well as 250 more, which have been used in the past, but at present are, probably temporarily, abandoned. And there are almost 50 in the little Commonwealth of Massachusetts, with its meager area of less than 8500 square miles.

Again, the reviewer wishes to recommend this volume to every practising physician and surgeon in these United States, and to congratulate Dr. Fitch upon having so ably filled a space heretofore all too empty in the medical education of North America.

Obesity. By Leonard Williams.

An unusually interesting book on obesity written by a man who has had tremendous experience in the field. In addition to the author's interesting theories concerning obesity, there are useful weight and diet tables. The author gets into the realms of speculative endocrinology, some of which is logical, some plausible, but which leads to statements which can be seriously questioned. No data or convincing experimental evidence is offered in support of his interesting viewpoints. His consideration of the question is based largely on the premise that men are katabolistic and women anabolistic. A conservative clinician will surely finish the book with the same healthy skepticism which he holds toward many hypotheses advanced by endocrinologists. On the other hand, the book contains a great deal of information which is very valuable to every clinician. It is unusually readable and contains many amusing incidents illustrative of the author's long study of human nature and his keen sense of humor.

BOOKS RECEIVED FOR REVIEW

The Clinical Interpretation of Blood Chemistry. By Robert A. Kilduffe. Philadelphia: Lea & Febiger. 186 pages. Price, $2.50.

Alkohol-Extrakt Reaktion. By Luttge and Mertz. Leipzig: Hirzel. 259 pages.

Die Klinik derbosartigen Gerschwülste. By Paul Zweifel and Erwin Payr. Leipzig: Hirzel. 656 pages.

A Manual of Materia Medica for Medical Students. By E. Quin Thornton. Philadelphia: Lea & Febiger. 384 pages. Price, $4.50.

Medical Science for Every Day Use. By Shields Warren. Philadelphia: Lea & Febiger. 178 pages. Price, $2.

Gynecological Diagnosis and Pathology. By Barbour and Watson. New York: William Wood & Co. 223 pages. Price, $4.

Physicians of the Mayo Clinic and Mayo Foundation. Philadelphia: W. B. Saunders. 578 pages. Price, $7.

A Textbook of Clinical Neurology. By Israel S. Wechsler. Philadelphia: W. B. Saunders. 725 pages. Price, $7.

The Diseases of Infants and Children. Volumes I and II. Griffith and Mitchell. Philadelphia: W. B. Saunders. 788 pages in Volume I and 927 in Volume II.

Compression of the Lung in the Treatment of Pulmonary Lesions. By Stuart Tidey. New York: Oxford University Press. 86 pages.